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FM 9-197

DEPARTMENT OF THE ARMY FIELD MANUAL

ORDNANCE GENERAL AUTOMOTIVE SUPPORT COMPANY

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ORDNANCE GENERAL AUTOMOTIVE SUPPORT COMPANY

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CHAPTER 1

INTRODUCTION

1. Purpose and Scope

a. This field manual describes the organization, employment, responsibilities, and functions of the Ordnance General Automotive Support (GAS) Company, TOE 9-197; its operating procedures; and the duties and responsibilities of personnel. It is designed, primarily, to provide the unit commander and key personnel of the unit with the basic information needed to operate the unit in a manner that will permit efficient mission accomplishment. The material herein supplements the basic information contained in FM 9-1, Ordnance Service in the Field, and FM 9-4, Ordnance General and Depot Support Service, and is general in nature. Detailed information on technical aspects of unit operations; defensive measures; and mess, supply, and administrative operations will be found in appropriate Army and Special Regulations, field and technical manuals, supply bulletins, and other Department of the Army publications listed in appendix I. Tactical operations and signal communications procedures and training functions are not included in this manual. These subjects are adequately covered in FM 9-4 and are applicable to all general support companies. The material presented herein is applicable to both nuclear and nonnuclear warfare.

b. Users of this manual are encouraged to submit recommended changes or comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line of the text in which change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded directly to the United States Army Ordnance School, Aberdeen Proving Ground, Maryland.

2. Mission and Capabilities

a. Mission. The GAS company—

- (1) Provides ordnance general support field maintenance service for wheeled vehicles and trailers.
- (2) In its general support role, the company provides limited reconditioning support on a non-assembly line basis for unserviceable, reclaimable wheeled vehicle engines, power train assemblies, and automotive fuel and electrical as-

semblies for return to supply channels. (Limited reconditioning restricts the extent to which an item may be disassembled and the quantity and type of replacement parts that may be utilized in the maintenance operation. It permits only that disassembly and parts replacement necessary to return the item to serviceability while prohibiting such operations as reboring engine blocks and grinding crankshafts.)

- (3) Although not specifically designed for the performance of depot maintenance, the GAS company may be assigned a depot maintenance mission (when depot maintenance operations are authorized and performed in the theater). In the performance of depot maintenance, the company may employ the most efficient production means available for this type of operation, including production (assembly) line operations.

b. Full-Strength Capabilities. At full strength, this company is capable of—

- (1) Providing general support maintenance for 2,862 wheeled vehicle equivalents, including trailers. (The definition and method of determining equivalents are contained in appendix X, FM 9-1.)
- (2) Providing limited reconditioning of the following concurrently within a 30-day period by other than assembly line methods:
 - (a) 125 to 150 miscellaneous wheeled vehicle engines.
 - (b) Approximately 625 wheeled vehicle power train assemblies such as transmissions, transfer cases, steering assemblies, and axles.
 - (c) Approximately 1,800 automotive fuel and electrical system assemblies (generators, starters, carburetors, regulators, distributors, fuel pumps, and governors).
- (3) Defending itself and its installations against hostile ground attack. Individuals of the unit can fight as infantrymen when required.

c. Reduced Strength and Type B Unit Capabilities.

- (1) The reduced strength column of the TOE adapts this unit to the lesser requirements for personnel and equipment during prolonged noncombat periods and for a limited period of combat.
- (2) The capabilities of a Type B organization are the same as those of a full strength organization. The Type B column of the TOE adapts this unit to the lesser requirements for United States military personnel. Vacancies

existing in the Type B column are indicative of the types of positions which can be filled by non-United States personnel (auxiliary labor).

d. Mobility. The GAS company is 50 percent mobile using organic transportation to move personnel and equipment.

3. Assignment

The GAS company is assigned to a field army, an independent corps, or a logistical command in the communications zone. The company may be assigned directly to a combined services headquarters, or may be attached to an ordnance battalion and contribute to the total effort of that battalion.

4. Allocation

GAS companies are allocated to the various sectors of the theater according to requirements for the type of support they render. These requirements vary from one sector of the theater to another; consequently, the number of GAS companies allocated also differs from sector to sector. The factors determining the number of GAS companies allocated to a particular sector include the density of wheeled vehicles supported, the volume of vehicular equipment to be reconditioned, and the support capability of the GAS company (par. 2*b*).

5. Modes of Operation

This company may operate separately, may be combined with other units into a battalion organization, or may be augmented by cellular units or auxiliary personnel. The mode of operation is determined by the mission to be performed, the capacity and capability of the unit, and the degree of control exercised by the ordnance officer of the command. In most cases, the company will function as part of a battalion organization. This arrangement facilitates direction and control and permits some of the administrative functions (such as the keeping of personnel records) to be handled at battalion level, thereby permitting the company to devote more time and effort to mission accomplishment.

6. Employment

This company is employed in the field army or in the communications zone. It is specifically designed to perform a general support maintenance mission, but may be utilized to perform a depot maintenance function.

a. In its general support role, the company acts as an intermediate maintenance echelon between depot support maintenance and direct support maintenance. The performance of general sup-

port maintenance involves, primarily, the repair of unserviceable items received from direct support units, ordnance collecting points, or supply facilities. Repaired or reconditioned items are returned to supply channels.

b. In its role as a depot support unit, the company performs maintenance on items received from collecting points, supply depots, or other general support units. The degree of maintenance performed will be determined by theater policy, and may include rebuild if approved by the Department of the Army (AR 750-4).

7. Application

The provisions of this manual are applicable to GAS companies operating in the field, both in the continental United States and in oversea commands. During individual, resident, and unit training, as well as field exercises, it is essential that general automotive support be taught and conducted in accordance with these prescribed procedures to insure efficient training of ordnance personnel. Ordnance officers, acting within their designated authority, may vary the procedures contained herein when it is evident that such variations will result in improved ordnance service.

8. Definitions

There is no section or glossary in this field manual devoted to definitions of terms. The terms used throughout this manual can be found in AR 320-5, "Dictionary of United States Army Terms," except for those few not yet incorporated in this regulation. The latter are defined or explained in the text when first introduced, and can be located by referring to the index.

CHAPTER 2

ORGANIZATION, FUNCTIONS, AND DUTIES OF PERSONNEL

Section I. ORGANIZATION AND FUNCTIONS

9. General

a. The TOE provides a basic organization along functional lines which is utilized when the company is performing its normal general support maintenance mission. If the company is assigned a depot maintenance mission, the basic TOE organization may have to be modified to facilitate efficient mission accomplishment. It should be remembered, however, that the company sacrifices efficiency when required to perform a mission other than the one for which it was specifically designed. *The utilization of the GAS company in the performance of missions for which it is not specifically designed is to be avoided where possible, and can be justified in extreme situations on a temporary basis only.*

b. Specific functions for which the GAS company may be assigned responsibility include—

- (1) Providing backup support by performing maintenance which is beyond the capability of direct support units.
- (2) Providing overflow support by performing maintenance which is beyond the capacity of direct support units.
- (3) Repairing items which are found to be unserviceable while in supply channels.
- (4) Performing maintenance on materiel evacuated to collecting points.
- (5) Processing costly items and items in critical supply that are beyond the maintenance capability of GAS units in the theater for shipment to rebuild facilities in the zone of interior (provided rebuild operations are not performed in the theater).

10. Organization and Functions

a. *General Support Maintenance Operations.* The GAS company is organized along functional lines. It contains a company headquarters; an operations section; a service, supply, and evacuation platoon having a section for each function; a wheeled vehicle repair platoon; and an engine and power train repair platoon.

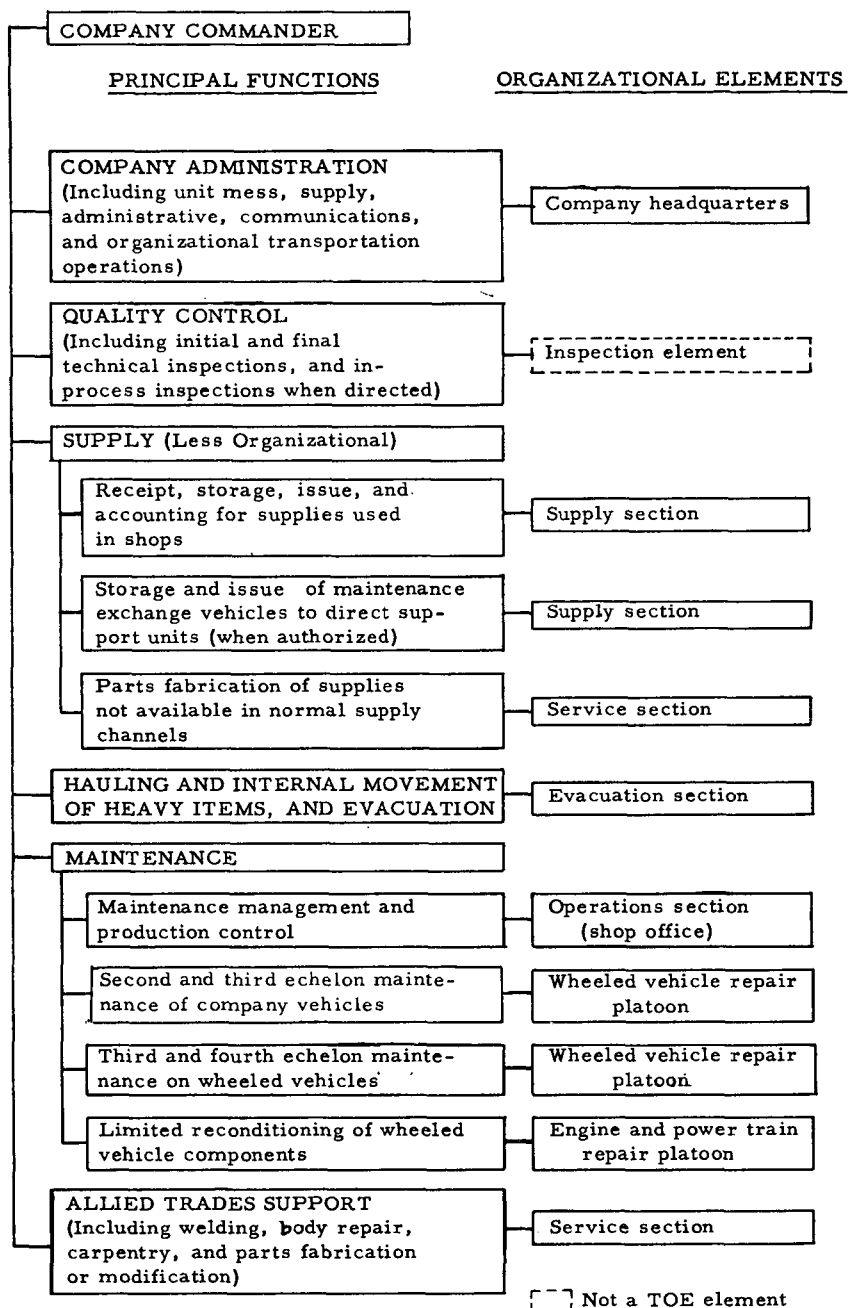


Figure 1. Functional diagram of an ordnance general automotive support company (when performing its normal general support maintenance mission).

These company elements perform the many varied administrative, supply, and maintenance functions necessary for accomplishment of the company's technical mission. The basic functions of the company and the element of the company responsible for each are listed below and are depicted in figure 1.

- (1) *Company headquarters.* This element performs command and administrative services, provides communications and mess facilities, and controls organizational transportation. The personnel clerk of this section may perform his duties at battalion headquarters when the battalion operates a consolidated personnel section.
- (2) *Operations section.* This section is responsible for the control of technical mission functions. It maintains shop production control and provides personnel to maintain quality control on items processed through the shop.
- (3) *Service, supply, and evacuation platoon.* This platoon performs repair work of an allied trades nature in support of the automotive maintenance operation. It also performs technical supply operations for the company and furnishes equipment and personnel to lift and move heavy items within the company.
 - (a) *Service section.* This section provides such allied trades support as welding, body repair, carpentry, and fabrication of parts for accomplishment of the company mission.
 - (b) *Supply section.* This section is responsible for the procurement, storage, in-storage maintenance, and issue of repair parts and supplies required by the various operating sections of the company.
 - (c) *Evacuation section.* This section prepares disabled vehicles and other heavy automotive assemblies and components for evacuation and provides the heavy equipment and personnel to lift and move heavy items within the company.
- (4) *Wheeled vehicle repair platoon.* This platoon performs fourth echelon automotive maintenance on wheeled vehicles and trailers, provides backup support by accepting overflow third echelon work from direct support and direct automotive support companies, and performs organizational maintenance on company vehicles.
- (5) *Engine and power train repair platoon.*
 - (a) This platoon performs limited reconditioning on un-serviceable, reclaimable, wheeled vehicle engines,

power train assemblies, and automotive fuel and electrical components for return to supply channels.

- (b) The repair skills and equipment utilized by the wheeled vehicle repair platoon are also evidenced in the engine and power train platoon. The wheeled vehicle repair platoon, however, is organized and equipped, primarily, to perform third and fourth echelon maintenance. The engine and power train repair platoon, on the other hand, contains additional skills and equipment to permit performance of limited reconditioning support. In situations where one platoon is not utilized to perform its primary functions, or is not fully utilized, this platoon can provide additional personnel for the inspection, production control, and technical assistance functions of the company. Personnel not utilized in this manner can be used to augment the capacity of the other platoon.

b. Depot Support Operations.

- (1) A depot support maintenance activity may include any combination of one or more GAS companies:
 - (a) If only one company is required, it may be organized and operated in the same manner as a GAS company performing a general support role. If assembly line procedures are employed in the maintenance operation, the organization and operations of the company may have to be modified to suit requirements. In this connection, see FM 9-4.
 - (b) Several companies may be used, each being assigned the responsibility for specific items. Each unit conducts independent operations. This type of operation permits companies to disperse without losing effectiveness in the depot maintenance activity.
 - (c) Several companies may be used by combining like sections of each company into commodity shops. This type of organization loses effectiveness when dispersed because of increased difficulty in retaining administrative control. In addition, housing and messing are more difficult.
- (2) The performance of a depot maintenance mission by a GAS company will require additional tools, equipment, and supplies. (Rebuild operations, if authorized, will be performed as indicated in FM 9-4.)
- (3) One or more GAS companies, augmented by auxiliary labor, may be used to perform the depot support mis-

sion. When GAS companies are augmented by auxiliary labor, the use of interpreters and translators may be necessary. These will be provided from appropriate teams of TOE 30-600. This labor will be employed as indicated in FM's 9-1 and 9-4.

Section II. DUTIES AND RESPONSIBILITIES OF PERSONNEL

11. General

Included within the organization of the GAS company are sufficient supervisory personnel to assist the commander in supervising and controlling all facets of company operations. In addition, there are specialists, of varying levels of skill, to perform the technical functions and the operations incident to company mess, supply, and administration. The supervisors are assisted in their functions by assistants. Repairmen of higher skill levels exercise direct supervision over repairmen of lower skill levels and assist in their training. Throughout the company, the operating and supervisory personnel are assisted in the accomplishment of the administrative functions of filing and the preparation of records, reports, and correspondence by clerks and typists who have varying duties. For the exact number, types, and specialties of personnel, see the table of organization.

12. Company Headquarters

a. Company Commander. Supervises company administrative functions; establishes policies; insures effective and efficient operation of all platoons and sections; takes all possible measures to assure the health, welfare, and morale of unit personnel; plans any tactical operations that become necessary; assures proper assignment and training of personnel; accomplishes or recommends promotions; and supervises all other activities required for accomplishment of the company mission. The commander is assisted in these functions by other supervisory personnel who are assigned certain functions either as a primary duty or as extra duties. Administrative duties of the commander are further discussed in chapter 3.

b. First Sergeant. Supervises company personnel, mess, clerical, and supply functions and assists in the supervision of training. He prepares or supervises the preparation of rosters, schedules, reports, orders, records, and correspondence, and supervises the maintenance of files.

c. Mess Steward. Supervises the operation of the company mess and the preparation of food and prepares mess records and reports.

d. Supply Sergeant. Supervises the storage, procurement, and issue of all TOE and TA equipment authorized the company and insures that in-storage maintenance is performed on stored items. He is also responsible for supervising the preparation of supply records and reports.

e. Motor Sergeant. Supervises the dispatch of company vehicles; schedules organizational maintenance and maintains related records; and arranges for the performance, by the wheeled vehicle repair platoon, of any second and third echelon maintenance required on organizational vehicles.

f. Personnel Administrative Clerk. Maintains personnel and administrative records and prepares required records and reports. (May work at battalion headquarters if a consolidated personnel section is maintained.)

g. Armorer. Assists the supply sergeant in the performance of organizational supply functions and performs second echelon maintenance on small arms issued to the company.

h. Switchboard Operator and Radio Operator. Install, operate, and maintain TOE communications equipment utilized within the company.

13. Operations Section Personnel

a. Operations Control Officer (Shop Officer). Supervises and directs the activities of the maintenance shops. He is responsible for shop production and answers directly to the commander for efficient and effective shop operations.

b. Repair Control Supervisor. Assists the operations control officer in the supervision of control processes throughout the productive platoons.

c. Repair Inspectors. Perform initial and final inspections on work received and repaired by the company. Determine the nature of repairs required and, in final inspection, determine if repairs were performed properly. Perform in-process inspections as directed by the commander.

d. Shop Clerk. Maintains job order register and production control records and files.

14. Service, Supply, and Evacuation Platoon

a. Service Section.

- (1) *Platoon leader.* Supervises and directs the activities of the platoon and is responsible to the commander for its efficient and effective operation. He is specifically responsible for the operation of the service section and directs and supervises all activities of the section.

- (2) *Section chief.* Supervises activities of the section and schedules, assigns, and coordinates work according to availability and capability of personnel and equipment. He also acts as platoon sergeant.
- (3) *Machinists.* Fabricate metallic parts, not otherwise available, for accomplishment of the company mission. They also fabricate jigs and fixtures as needed in the maintenance operation.
- (4) *Senior metal body repairmen.* Supervise the repair, repainting, and installation of metal body components, radiators, fuel tanks, etc., and the modification of other related items as directed. They may perform these functions but generally supervise the metal body repairmen in the performance of these tasks.
- (5) *Senior welders.* Weld, straighten, and align damaged equipment and supervise other welders in the performance of similar duties.
- (6) *General carpenters.* Perform general carpenter work such as repair or replacement of any wooden components of vehicles. They also construct boxes, crates, and other wooden structures needed in performance of the unit mission.

b. Supply Section.

- (1) *Supply officer.* Directs the requisitioning, receipt, storage, in-storage maintenance, and issue of repair parts and supplies to the operating sections of the company and serves as assistant platoon leader of the service, supply, and evacuation platoon.
- (2) *Section chief.* Responsible to the supply officer for all phases of stock accounting pertaining to ordnance supplies and equipment; for records, reports, and documents pertaining to receipt and issue of supplies; and for training in methods and management fundamentals for personnel of the section.
- (3) *Senior ordnance supply specialists.* Advise on the use, interchangeability, and identification of ordnance repair parts. Inspect incoming shipments of parts and establish locator card systems to show the physical location of parts in storage.
- (4) *Supply specialists, stock records specialists, supply clerks, and stock records clerk.* Maintain stock records pertaining to receipt, storage, and issue of ordnance general supplies; examine requisitions and incoming shipments to verify correctness of nomenclature, stock

number, and classification; maintain stock control records and supply accounting systems.

- (5) *Forklift operator.* Operates the forklift truck in connection with unloading, relocating, and loading of supplies and other materiel handled by the platoon. Must be familiar with the principles of warehousing, stacking, and palletizing. Assists in moving heavy items to and from other platoons and sections of the company. When not engaged in operating or maintaining forklift truck, assists supply clerks in the performance of their duties.

c. Evacuation Section.

- (1) *Section chief.* Responsible to the platoon leader for the effective and efficient operation of the section, for the proper use and maintenance of equipment, and for the training and proper performances of personnel.
- (2) *Wrecker operators.* Perform movement and evacuation of materiel within the unit and to other supply and maintenance facilities when necessary. Drive, maintain, and operate wreckers and hoists, and perform the rigging necessary for the operation.

15. Wheeled Vehicle Repair Platoon

a. Platoon Leader. Supervises and directs the activities of the platoon and is responsible to the company commander for its effective and efficient operation.

b. Assistant Platoon Leader. Assists the platoon leader in supervising shop operations.

c. Platoon Sergeant. Assists the platoon leader and assistant platoon leader in the coordination and supervision of platoon activities.

d. Senior Automotive Repairmen. Perform third and fourth echelon maintenance on wheeled vehicles. They supervise and instruct automotive repairmen and repair helpers in the performance of similar duties.

e. Fuel and Electrical Systems Repairmen. Repair, replace, and adjust automotive fuel and electrical systems components.

16. Engine and Power Train Repair Platoon

a. Platoon Leader. Supervises and directs the activities of the platoon and is responsible to the company commander for its efficient and effective operation.

b. Assistant Platoon Leader. Assists the platoon leader in supervising and directing the operations of the platoon.

c. Platoon Sergeant. Assists the platoon leader and assistant platoon leader in coordinating and supervising the activities of the platoon.

d. Senior Automotive Repairmen. Repair, adjust, replace parts, and perform limited reconditioning on wheeled vehicle engines and power trains. They supervise and instruct automotive repairmen and repair helpers in the performance of similar duties.

e. Fuel and Electrical Systems Repair Supervisor. Directs and supervises all activities and personnel engaged in fuel and electrical systems repair, and schedules, assigns, and coordinates work in accordance with the capabilities and availability of personnel and equipment.

f. Senior Fuel and Electrical Systems Repairmen. Repair and recondition unserviceable, reclaimable automotive fuel and electrical systems components for return to supply channels. They supervise and instruct fuel and electrical systems repairmen in the performance of similar duties.

17. Auxiliary Labor

Auxiliary labor, if available, is a good source of manpower for augmenting the capacity of a GAS company. Such labor is especially useful when the company is performing a depot maintenance mission. Operations such as handling, transporting, and storing materiel can be performed by auxiliary labor with only a minimum of training being required. Similarly, this labor can easily be taught to satisfactorily perform such operations as construction of boxes; preservation, packing, and crating of materiel; and minor repair operations. Use of auxiliary labor in this manner increases the capacity of the company and frees military personnel for other duties. For information on the procurement and use of auxiliary labor, see FM's 9-1, 9-4, 27-10; TM 19-500; and DA Pam 27-1.

CHAPTER 3

ORGANIZATIONAL MESS, ADMINISTRATION, AND SUPPLY

18. General

a. The commander is responsible for all that his company does or fails to do. In his absence, the responsibility for commanding, directing, and supervising the company falls upon the next senior officer in the company, unless higher authority directs otherwise. The duties and responsibilities of the commander may be divided into two general areas: he must supervise, command, and direct the company in a manner that will most efficiently and effectively accomplish the technical mission; and he must assure the accomplishment of all the functions necessary to properly clothe, equip, feed, house, assign, and train personnel and to maintain their morale and health.

b. A commander must devote a certain amount of attention to each function, but he cannot personally direct every aspect of the organization's mess, supply, and administrative operations. Moreover, he must not allow himself to become so enmeshed in administrative problems that he is forced to neglect the technical mission of the company. Therefore, he will assign personnel to accomplish some of these functions and delegate others as extra duties. Company officers are appointed to such positions as voting officer, mess officer, troop information and education officer, intelligence officer, and postal officer.

c. Although the commander is concerned with all aspects of his unit's operations, there are certain functions which require more of his attention than others, and certain ones which he cannot delegate. Those of most concern to the commander are listed below. Duties and responsibilities allied to the technical mission are covered in the remainder of this field manual. The general duties of company commanders are listed in AR 220-70.

19. Mess Operations

a. *Commanders' Responsibility.* The commander must assure that his personnel are properly fed, that food is prepared in a palatable and sanitary manner, and that the unit mess is kept sanitary. Direct supervision of the unit mess may be exercised by the commander or by a mess officer appointed by him. The

commander or mess officer must make daily inspections of the mess, and verify the completeness of mess records and reports. For further information on the conduct of mess operations and the duties of personnel, see AR 30-41 and TM 10-405.

b. Organization of Unit Mess. The organization of the mess includes the mess officer, mess steward, cooks, cooks' helpers, and kitchen police. Duties of personnel include:

- (1) *Mess officer.* Supervises operation of messing facilities; obtains the required subsistence, equipment, and supplies necessary for operation of the mess and feeding of troops; makes frequent inspections of the mess to insure proper storage, handling, preparation, and economical use of food and maintenance of equipment; assures that all phases of sanitation are enforced; supervises on-the-job training of mess personnel; and supervises the keeping of mess records and accounts.
- (2) *Mess steward.* Responsible to the mess officer for the operation and control of the mess; supervises the actual preparation, cooking, and serving of food; inspects mess personnel for cleanliness and insures that mess facilities and equipment are kept in a sanitary condition; establishes operating and work procedures for mess personnel and assigns duties to individuals; prepares cook's worksheet for the guidance of cooks in preparing and serving food; prepares estimates of the number of rations required; instructs and supervises instruction of mess personnel and makes recommendations on promotions; and prepares and maintains accounts, records, and related reports.
- (3) *Cooks.* Prepare, cook, and serve food; train cooks' helpers; and supervise and direct the work of cooks' helpers and kitchen police.
- (4) *Cook's helpers.* Assist cooks in the preparation, cooking, and serving of food, and in the cleaning of mess facilities and equipment.

c. Troop Train and Motor Convoy Messing. When troops are transported by rail, they are either fed from kitchen cars or are issued meal tickets (in CONUS) or operational rations. Rail is often used to transport units, as a whole, on long moves. Units may also be moved by motor convoy and may subsist on packaged lunches or operational rations, or may be fed from kitchen trucks. Units which are airlifted will also subsist on packaged lunches. For further information on troop train and motor convoy ration procedures, see AR's 31-154, 31-157, and 31-310 and TM 10-206.

20. Organizational Supply Operations

a. General. Most of the functions incident to organizational supply operations will be performed by supply personnel. The commander, however, must exercise control over these operations either personally or through a supply officer which he designates. Organizational supply encompasses all the operations required to obtain, account for, store, and replenish individual clothing and equipment, as well as organizational equipment and supplies. Supplies and equipment in this category include individual equipment such as weapons and clothing; and organizational equipment such as desks, typewriters, tool sets, shop tools, vehicles, etc. Organizational supply operations are conducted in accordance with AR 735-35. With respect to organizational supply, the commander is responsible for:

- (1) Having in his possession or on requisition all articles currently authorized for his unit.
- (2) Conducting frequent inspections to insure that all supplies on hand are complete and serviceable.
- (3) Insuring that unit personnel have adequate knowledge of the care and maintenance of property and that they understand the principles of supply economy.
- (4) Making certain that no unauthorized property is on hand, and that excesses are turned in through appropriate channels.
- (5) Insuring that Organizational Clothing and Equipment Records (DA Form 10-102) are maintained. (These are maintained and filed either by the company or by higher headquarters. See AR 735-35.)
- (6) Insuring that individual clothing records are maintained. These records, for enlisted men, are maintained on the Individual Clothing Record, DA Form 10-195. (These forms too are maintained and filed by the company or by higher headquarters.)
- (7) Assuming responsibility for all Government property under his control, regardless of whether he receipts for it.

b. Classes of Supply.

- (1) *Class I.* This class consists of items which are consumed by personnel at an approximately uniform rate. Rations are included in this category. Rations are requested on a DA Form 10-163, which is prepared by the mess steward and signed by the mess officer or commander. These requests are presented to the class I supply point

for issue action. Unit supply personnel are not directly concerned with this transaction.

- (2) *Class II and IV.* These classes include supplies and equipment authorized by the Department of the Army and prescribed in tables of equipment, tables of allowances, or similar authorization documents (class II) and items not otherwise classified and for which initial allowances are not prescribed by approved issue tables, such as items of special equipment not listed under class II authorizations which may be required for operation of a GAS company under certain conditions. Unit supply procures, stores, maintains in storage, and issues those items of supply listed in TOE, TA, and special authorization documents which are authorized and needed for the internal functions of the company. Normally, unit supply will not be involved in the requisitioning, storage, and issue of repair parts and maintenance supplies consumed by the shop in the normal course of company maintenance operations, except for those supplies that are the logistical responsibility of another technical service. Most of the repair parts and maintenance supplies needed for shop operations are obtained, stored, and issued by the supply section of the service, supply, and evacuation platoon.
- (3) *Class III.* This class of supply consists of petroleum fuels and lubricants drawn from a quartermaster supply point against an allocation established by G4.
- (4) *Class V.* This class of supply includes ammunition, explosives, and chemical agents. Replenishment of ammunition in a GAS company is accomplished as prescribed in FM 9-5. The company supply sergeant prepares the transportation order (ammunition requisition) and presents it to the supporting ammunition installation or activity for issue action. In the storage and accounting for class V items, the procedures in FM 9-5 must be followed.

c. Organization for Supply Operations.

- (1) *Company commander.* Although not accountable, the commander is still responsible for supplies and equipment in his organization. He must exercise supervision over the functioning of his supply operation and, if his company is operating separately, must assure that his property book officer knows and properly performs his duties. The company commander or the property book

officer may initiate documents to obtain relief from responsibility for lost, damaged, or destroyed property (quarterly droppage allowance, statements of charges, reports of survey).

(2) *Property book officer.*

- (a) The company property book will normally be maintained at battalion headquarters by a property book officer. When this is not practicable, as in the case of separate companies, the company commander will appoint a property book officer.
 - (b) The property book officer maintains informal accountability for supplies and equipment, employing the supply and accounting procedures contained in AR 735-35. He is responsible for conducting appropriate inventories upon change of individuals holding hand receipts, upon the change of property book officers; when adjusting discrepancies, or at least once every 6 months. Required adjustments and entries to records must be made following the inventories.
 - (c) He is also responsible for initiating action to adjust inventories and to fix responsibility for lost, damaged, or destroyed property. In so doing he will prepare the necessary documents in accordance with the provisions of AR 735-10 or AR 735-11, as applicable.
 - (d) The property book officer prepares the necessary Requests for Issue or Turn-In (DA Form 1546) upon being notified of requirements by the supply sergeant or when a turn-in is necessary.
- (3) *Supply sergeant.* The supply sergeant procures, stores, maintains in storage, and issues general supplies of all technical services authorized by TOE, TA, and other media required for internal functions of the company, and is responsible for the secure storage and maintenance in storage of individual small arms for the company. The supply sergeant will not normally maintain a transaction register and file. These documents, which support entries in the property book, are kept by the same individual who maintains the property book (AR 735-35). In the performance of the functions associated with his job, the supply sergeant is assisted by the armorer and by clerical personnel of company headquarters. His activities are supervised by the first sergeant, the company commander, and the property book officer.

d. Authorization Documents and References.

- (1) The organizational equipment authorized the GAS company is listed in TOE 9-197. TA 21 lists organizational clothing and equipment for all Army personnel under all climatic conditions. TA 20-2 lists equipment for support of training. Special TA's are published to provide items not otherwise listed in TA's or other authorization media and applicable to a particular oversea area. TA 20-4 lists food service equipment. TA 20-8 lists allowances of office furniture and equipment. Other TA's list expendable supplies authorized the unit.
- (2) Organizational supply operations are conducted in accordance with AR 735-35. DA Pam 310-1 indexes regulations. TOE's and TA's are indexed in DA Pam 310-7. These indexes should be checked frequently to determine whether any changes, supersessions, or rescissions exist.

21. Organizational Maintenance

a. The commander is responsible for the proper operation and maintenance of organizational equipment. He, in turn, will hold the individual users, operators, and supervisory personnel responsible for proper operation, care, and maintenance of organizational equipment. The motor sergeant has the greater part of the company maintenance as a principal duty, since vehicles require the greatest portion of the total organizational maintenance effort.

b. First echelon maintenance on equipment utilized within the company is performed by the users or operators of this equipment. Second echelon maintenance on small arms is performed by the armorer. Second and third echelon maintenance on the company's vehicles is performed by the company shops. Maintenance is performed according to the procedures outlined in the technical manuals dealing with the equipment. With respect to vehicles, the procedures relative to inspections and preventive and organizational maintenance as outlined in AR 750-5 and TM 9-2810 will apply.

22. Administration and Personnel Management

a. General.

- (1) The bulk of the administration incident to company operations is handled by the first sergeant and the company clerks. Some of these operations, however, must be performed by the commander.
- (2) The first sergeant personally supervises the keeping of all records, files, and correspondence. He maintains duty

rosters and issues company orders when directed. (AR 310-110A shows the format used for company orders, and discusses their use and authentication.) The first sergeant is responsible for the accuracy of reports made to higher headquarters. The performance of routine administration should require only a minimum of supervision on the part of the commander.

b. Correspondence and Reports—Preparation and Filing. Correspondence and reports will be prepared by the company clerks under the supervision of the first sergeant. AR 340-15 deals with the preparation of military letters and indorsements. The filing, maintenance, and disposition of records is covered in regulations of the 345-series, particularly AR 345-292.

c. Personnel Administration.

- (1) *Promotions.* The promotion of qualified and deserving individuals is an aspect of management that improves or disrupts the morale of a company, depending on how promotions are handled. Promotions should not be automatic nor based on partiality. Each individual should be informed of the necessary qualifications and requirements for promotion to the next higher grade and encouraged to prepare himself for a more responsible position. The company commander's promotion authority is limited to certain grades (E3 and E4), but he can recommend personnel for promotion to higher grades. Promotions of enlisted personnel are covered in AR 624-200.
- (2) *Demotions.* Company commanders are also empowered to demote personnel from pay grades E3 and E4 and to recommend the demotion of personnel in higher grades. These demotions may be made because of misconduct, inefficiency, or conviction by a civil court. See AR 624-200.
- (3) *Assignments and reassignments.* Commanders must assign personnel according to their qualifications and initiate action to effect reassignment if the skills can be better utilized in another capacity, or if the individual is accident prone and for safety reasons should be placed in another job. The conditions under which enlisted personnel may be reassigned between units of the Army and the procedures to be followed are set forth in AR 614-240.
- (4) *Separations.* Company commanders are also responsible for initiating board action to effect the separation of

personnel because of unsuitability for military duty, undesirable habits and traits of character, and misconduct. The general provisions for discharge and release and the procedures to be followed are contained in AR's 635-200, 635-204, 635-205, 635-206, 635-208, and 635-209.

- (5) *Awards.* Commanders may recommend the granting of awards and decorations to deserving individuals. The criteria for such awards and the procedures to be followed are set forth in AR 672-5-1.
- (6) *Military justice.* A commander must maintain discipline in his organization and must mete out punishment that is fair and impartial when an individual is guilty of misconduct. Punishment can range from company punishment administered by the company commander to court martial. For further information on the administration of military justice, see the Manual for Courts-Martial, United States.
- (7) *Personnel records.* The Enlisted Qualification Record, DA Form 20, should be used by commanders and classification personnel to determine training and assignments, including duty assignments within an organization. It is kept up to date by the custodian of the individual records (usually at the battalion personnel section). It may be kept by the company if custody of records is not assigned to a higher headquarters. The form 20 reflects duties performed, skills acquired, etc. The Officer Qualification Record, DA Form 66, is similar in nature and is initiated and maintained in the same manner. For information on the preparation and maintenance of these records, see AR's 140-138, 611-103, and 640-203.
- (8) *Efficiency ratings.* Commanders are required to periodically rate the efficiency of officers serving under them. In addition, the efficiency of enlisted personnel must be rated. The procedures to be followed in making these ratings are set forth in AR's 623-105 and 623-201.

d. Morning Report. The Morning Report, DA Form 1, is the form from which most of the information recorded on various personnel records is obtained. It is prepared by the company clerk and reflects the day-to-day strength of the company, transfers, assignments, or promotions, and is the basis for ordering items of supply issued on a troop strength basis. It is authenticated by the commanding officer or by an officer or warrant officer authorized by him or by higher authority. It is prepared as indicated in AR 335-60.

e. Duty Roster. The Duty Roster, DA Form 6, is prepared and maintained to establish a fair and equitable distribution of duty assignments among the men of the company. It is an important factor in building and maintaining good morale. The duty roster is maintained by the first sergeant. AR 220-45 covers the preparation and maintenance of duty rosters.

f. Sick Slip. The Individual Sick Slip, DD Form 689, is used first to route men reporting for sick call to the dispensary, and then to inform the commander as to the disposition of the reported sick cases. It constitutes a medium for the exchange of information between the medical officer concerned and the patient's unit commander. The slip is normally initiated by the first sergeant or unit clerk at the company and is completed by medical personnel at the medical facility. In case of emergency it may be initiated at the medical facility. AR 40-207 governs the use and preparation of the sick slip.

g. Welfare and Recreation.

- (1) The commander, working through the first sergeant, can determine when personal problems of any of the men require his attention. Often the first sergeant can give valuable advice in the solving of such problems. If the problems cannot be handled locally, the commander may refer the individual to the chaplain, legal assistance officer, or American Red Cross for assistance on personal or legal problems, and to Army Emergency Relief or the American Red Cross for assistance on financial matters. See AR's 600-103, 910-10, and 940-10.
- (2) In addition, the commander should do his utmost to provide for off-duty recreation. This can be accomplished by judicious use of the company fund (local directives and AR's 230-5, 230-10, 230-20, and 230-21 cover procedures for unit funds) and by utilizing the facilities and equipment provided by special services. See AR 680-20.

h. Mail Service. Mail is one of the most important factors contributing to morale of personnel in the unit. Each unit must have an efficient and effective mail service to assure that personnel receive mail promptly and to facilitate the dispatch of mail initiated by unit personnel. Each company commander will appoint a postal officer and a mail clerk to carry out these functions. The duties and responsibilities of the postal officer and the mail clerk are outlined in AR 65-75.

i. Standing Operating Procedures (SOP's). SOP's are prepared for each operation or function that is routine in nature or that

the commander desires to make routine. They should conform with procedures established by higher headquarters. SOP's guide personnel in the performance of tasks that are not subject to frequent change and relieve commanders and supervisory personnel from the necessity of making frequent decisions and publishing directives dealing with routine matters.

j. Loading Plans.

- (1) To facilitate movement of the company, plans for the loading of personnel and equipment must be made for every type of transport that may be utilized in a move. Plans must be made well in advance to provide time for any necessary packaging and preservation. Plans are based on the type of transport to be used (truck, rail, aircraft, or ship); the number of personnel involved; and the type, size, weight, and quantity of supplies and equipment to be moved.
- (2) Short moves, especially in oversea theaters, will most likely be made by motor transport, and loading plans should be made for this type of move. A type loading plan for motor movement is shown in appendix II. Longer moves, especially in the continental United States, are usually made by rail. A move may be made by more than one mode of transport, as in the case of a company moving from an installation in CONUS to a terminal by rail, and then on to an oversea theater by ship. Loading plans must be made for all modes by transport to be used.
- (3) In the preparation of movement and loading plans, consideration must be given to priority of loading, safeguarding of equipment and supplies in transit, security, and the placing of personnel with or near their equipment. A logical embarking and debarking process must be included in the plan. All plans must be designed to permit rapid and orderly debarking and regrouping of personnel and equipment to facilitate speedy resumption of mission activities.
- (4) FM 101-10 contains valuable information on movement of personnel and equipment, including tonnages that can be handled by various modes of transport, loading procedures, the number of trucks required for motor movements, etc. SB 9-156 lists specifications, instructions, and related publications pertinent to packaging and processing ordnance general supplies for shipment. Detailed packing, boxing, and loading instructions for shipping ordnance items are contained in TB 9-OSSC-A through TB 9-OSSC-F, and SB 9-184/1.

CHAPTER 4

TECHNICAL OPERATIONS

Section I. INTRODUCTION

23. General

a. Although the GAS company is primarily intended to perform fourth echelon maintenance, it will perform third echelon work that is beyond the capacity of the direct support units it is supporting and, if assigned a depot maintenance mission, may perform fifth echelon maintenance. (Echelons and categories of maintenance are defined in AR 750-5.) Depot maintenance, however, consists principally of limited reconditioning. Full scale fifth echelon maintenance consists of rebuilding end items and components, regrinding and reboring operations, and the fabrication of parts. Rebuild operations are performed only when authorized by the Department of the Army (AR 750-4).

b. When operating in the field army service area, the GAS company performs fourth and overflow third echelon maintenance in support of direct support units or ordnance collecting points. When operating in the communications zone, it may perform third and fourth echelon maintenance as noted above, or may be assigned the mission of providing fifth echelon maintenance support.

c. The GAS company performs field and depot maintenance on wheeled vehicles and trailers only. This permits its maintenance operations to be more streamlined than those of a company dealing with more than one commodity.

24. Maintenance Responsibilities

a. *General Support.*

- (1) GAS companies in a theater of operations complement the efforts of the direct support units. Usually the mission of a GAS company is established by assigning it the responsibility of supporting certain designated direct support units. Repair jobs that are beyond the capability or capacity of the direct support units are evacuated to the general support unit. When the tactical situation requires a direct support unit to move, the GAS company accepts incomplete wheeled vehicle repair jobs.

- (2) GAS companies may also be assigned the responsibility of supporting an ordnance collecting point. Each collecting point has specific maintenance units assigned, as required, to perform repairs on evacuated materiel.

b. Depot Support. It is often difficult to differentiate between the responsibilities of depot maintenance and those of general support maintenance. The overall responsibility of depot maintenance is to repair or recondition those items which are beyond the capacity, and in some cases the capability, of field maintenance. This increase in capacity is largely due to the fact that more time is allowed for the performance of depot maintenance. Moreover, a GAS company assigned a depot role may find it possible to obtain and use more elaborate tools, equipment, and facilities, since depot maintenance installations are relatively fixed and normally remain in one location for long periods.

c. Technical Assistance. Ordnance GAS companies are responsible for providing technical assistance to other ordnance maintenance units. Such assistance may be provided to direct support units when the level of skill in the GAS company is higher than the level in the direct support unit. This assistance may be necessary to provide instruction on the maintenance of new items of vehicular equipment entering the theater. A GAS company may also provide technical assistance to another general support unit.

25. Functional Organization

a. For the performance of a general support maintenance mission, the GAS company is organized along functional lines (fig. 2). Each GAS company so employed has four basic functions: inspection, shop supply, service, and repair. Within the structure of the GAS company, all functions are supervised by the company commander. The service and repair functions are directly controlled by production control (a function of the shop office), which also acts as the coordinating agency for all maintenance functions. For routine operations, production control coordinates the inspection and supply activities with the maintenance shop.

b. There is no fixed organizational pattern for providing depot support maintenance. The structure of each depot maintenance installation will depend on the mission, the units required, and the units or auxiliary labor available. The GAS company may operate a depot maintenance installation alone or in conjunction with other maintenance units and auxiliary labor. A depot maintenance installation consists of the number and types of commodity specialized units needed to accomplish its mission. Figure 3 illustrates the composition of a typical depot maintenance

installation. For additional information on the operation and organization of a depot maintenance installation, see FM 9-4.

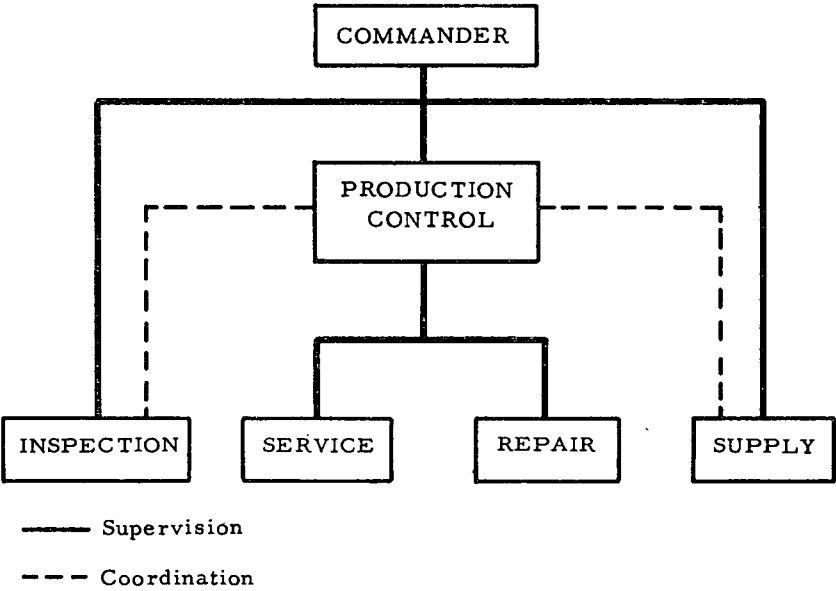


Figure 2. Functional organization of a general automotive support company.

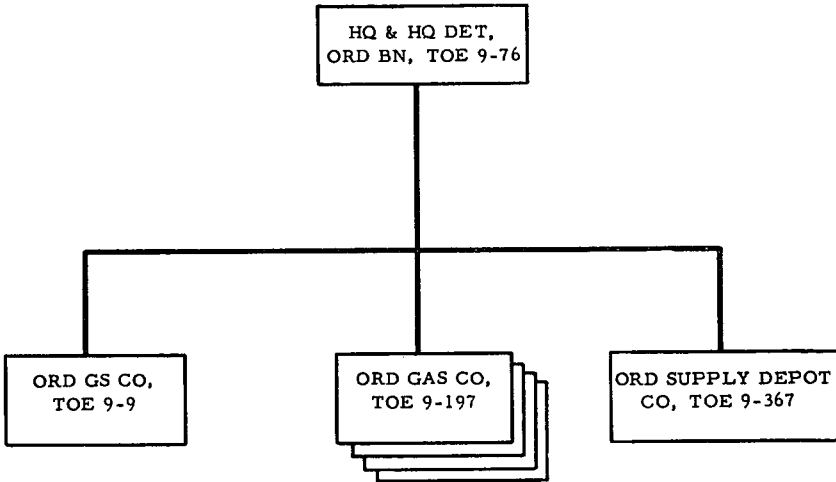


Figure 3. Typical organization of a depot maintenance installation.

Section II. MAINTENANCE MANAGEMENT

26. Production Methods

The repair platoons of the GAS company are divided into a number of production shops, with each shop performing maintenance on like items; i.e., engines, power trains, fuel and electrical systems. Chassis repair is performed by the service section of the service, supply, and evacuation platoon. The production methods usually employed by the maintenance shops include job shop and bench shop repair. When performing a depot maintenance mission, production line techniques may be employed. The choice of method will be dictated by the type of materiel to be repaired, and the personnel, facilities, and time available. The production methods of a company assigned a depot maintenance mission will, therefore, differ from those employed by a company performing a general support maintenance mission. Circumstances may make it expedient to use more than one of the methods within a single shop, a significant factor being the quantity of materiel to be repaired.

a. Production Line. The production (assembly) line method may be used when a large volume of items must be reconditioned and the procedure can be broken down into a series of independent operations. The production line consists of a series of work stations through which each item is passed with certain operations being performed at each station. In this type of operation, workers of limited capabilities may be trained to skillfully perform a specific job at a particular station. Parts requirements are computed for a production run on the basis of inspection or by a known mortality rate. A production line should be used whenever practicable, inasmuch as it is the fastest and most efficient type of operation (providing a sufficient number of items are to be processed). Complete disassembly of end items or any components thereof should be accomplished only if required and economically feasible. The production line method is normally employed at depot level. Appendix VII of FM 9-4 illustrates how this method is employed.

b. Job Shop. The job shop production method is used when the type of work varies between jobs, or the item is extremely difficult to move. The work is placed in a bay and the work is done by an assigned crew of repairmen. Assemblies may be sent from the job shop to other shops (such as machine shops) for necessary work. Vehicle maintenance shops are usually operated as job shops. This is the method most frequently utilized by a GAS company. Parts requirements are determined for each job and repair parts are obtained before work is initiated. The job

shop method is also known as the “bay” method of shop operation. Section III explains how the shop of a GAS company is laid out to utilize this method.

c. Bench Shops. Bench shops may be used when the repair of small items requires a high degree of technical skill. In this method the item is repaired by a worker at a bench. Because of the relatively small volume of work done and the limited variety of items to be repaired, it is usually advisable to maintain a stock of parts in the section, the quantity being determined by experience. Bench shops are used for the repair of fuel and electrical system assemblies.

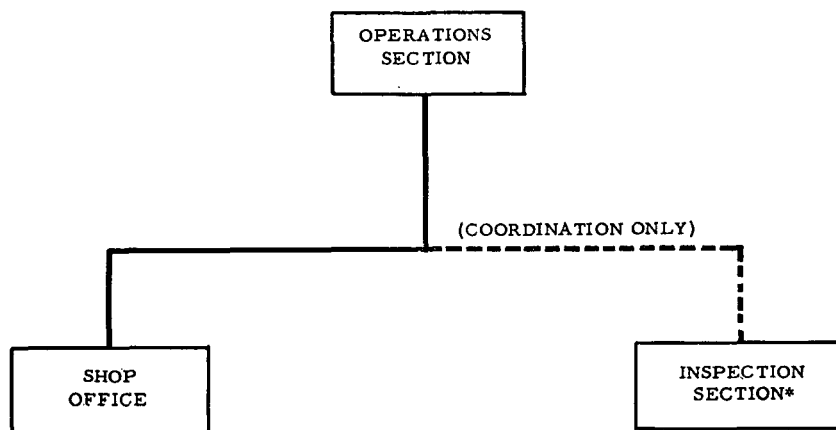
27. Controls

a. Production Control.

- (1) Production control is the application of common sense, good judgment, and prompt remedial action, coupled with the necessary managerial tools, to direct and control the flow of work in a manner that results in a maximum output of quality work. This is accomplished by balancing the workload within the unit to eliminate overloads or underloads, by knowing the status and quantity of work in each of the shops in order to prevent bottlenecks, by controlling the quality of work performed by repairmen, and by improving operational procedures.
- (2) Control of work throughout the shop is maintained by the shop office (fig. 4). The shop office, under the supervision of the operations control officer, uses several tools of production control to monitor and control the flow of work through the shops.
- (3) The principal means for determining the status of work in the shop are the job order register, the tub file, and the control board. When a job is accepted for shop entry, an entry is made on the job order register, and the job is given an identifying number. The register shows the vehicle registration number, type of vehicle, date of entry into the shop, organization or individual initiating the work request, date of final inspection, and disposition of the item. The tub file is a device designed to keep the records associated with a job in one place and in such a manner that the position of the records in the file indicates the progress of the job through the shop. The control board is a device that is used to reflect the workload of the various shop sections. It shows, at a glance, the location and state of completion of each job

and the load in each shop section. For further information on these tools of production control and an explanation on how they are used, see appendix V, FM 9-4.

b. Quality Control. Inspection of materiel constitutes one of the most important aspects of the ordnance maintenance function. The inspection section (fig. 4) provides the means by which the commander of a GAS company can control the quality of the work done in his shops. Therefore, the inspectors must be responsible only to the commander. The personnel selected for the inspection section should be highly skilled repairmen. They must be able to diagnose deficiencies in a piece of equipment, prescribe necessary repairs, and accurately determine the adequacy of the repairs performed on equipment coming out of the shops. The inspection performed on materiel prior to shop entry is termed the "initial inspection"; the inspection performed after repair is completed is termed the "final inspection." These inspections are also known as "technical inspections." In addition to the initial and final inspections, "in-process" inspections of work in progress are necessary to assure that work is being performed properly.



* Although the inspectors are listed under the operations section of the TOE, the inspection section takes its orders from and reports directly to the company commander. The activities of the inspection section are coordinated with those of the production shops by the operations section.

Figure 4. Organization of the operations section.

Section III. SHOP OPERATIONS

28. Shop Office

a. The shop office is part of the operations section (fig. 4). It operates under the supervision of the operations control officer,

who is directly responsible to the company commander. The operations control officer is assisted by the repair control supervisor in the planning, records control, and records filing activities of the shop office. The shop office is staffed with the clerks necessary to assure efficient operation.

b. The functions of the shop office include—

- (1) Supervising all shop activities.
- (2) Coordinating the activities of sections engaged in accomplishment of the company's technical mission.
- (3) Receiving and receipting for all jobs received by the company.
- (4) Determining whether jobs are to be done in the shop or evacuated.
- (5) Routing and controlling the movement of work through the shops.
- (6) Establishing job priorities in accordance with existing directives.
- (7) Interpreting and implementing technical directives or specifications received from higher headquarters.
- (8) Anticipating and trying to avoid bottlenecks within the shop by—
 - (a) Temporarily reassigning technicians and specialists among the shop sections consistent with the demands of the workload.
 - (b) Rerouting work, when necessary, so that the capabilities of each shop section are fully utilized.
 - (c) Taking action to expedite delivery of repair parts and supplies as required.
 - (d) Arranging for evacuation of ordnance materiel as required.
- (9) Analyzing job productivity and improving shop layout, repair techniques, and procedures to promote maximum productivity while maintaining quality standards.
- (10) Devising methods for accumulating data for statistical, recurring, and special reports pertaining to maintenance activities while eliminating unnecessary intershop reports.
- (11) Preparing all reports on shop operations.
- (12) Maintaining the daily operations chart.
- (13) Insuring that shop supervisors understand the methods of routing both work and administrative forms.
- (14) Insuring the accomplishment of maintenance on shop equipment and facilities.

- (15) Maintaining necessary production control systems. See appendix V, FM 9-4.
- (16) Keeping records on the location and status of each job.
- (17) Keeping files on the status of all active job orders.
- (18) Maintaining records of completed work.

c. The records and reports utilized in GAS company shop operations are illustrated and explained in appendix IV of FM 9-4.

29. Inspection Section

a. General.

- (1) Two of the most important operations performed in a GAS company's shop are the initial and final inspections. These inspections are performed by inspectors who are directly under the control of the company commander. They may also perform inspections of work in process as directed by the commander. Control by the commander is essential to preclude any undue influence being exerted on the inspectors by subordinate elements of the command. Since the quality and quantity of work performed in the shops determine, to a great degree, their overall efficiency, the commander should select well qualified men to act as inspectors.
- (2) The inspection personnel authorized by TOE may be augmented, if necessary, by capable repairmen from other shop sections. Each shop section should furnish inspectors, when required, who can be relied on to make accurate and complete diagnoses. The composition of the inspection section is dependent on the particular situation and conditions under which it must operate.

b. Functions of the Inspection Section.

- (1) Makes an initial inspection of equipment entering the shop to determine what deficiencies exist and the nature of repairs necessary.
- (2) Indicates, on the job order, the work required.
- (3) Determines the parts requirements for each job and estimates the time required for repairs.
- (4) Performs a final inspection on equipment before it leaves the shop and, when necessary, returns the item for additional work.
- (5) Performs the acceptance inspection on ordnance and items of organizational equipment received by the company to determine whether all components are present and to detect any deficiencies.

- (6) Performs in-process inspections as directed by the commander to assure that work is being performed properly and to identify areas in which operations can be improved.

c. Initial Inspection. Materiel received by the GAS company must be thoroughly inspected to determine whether it is repairable at that level or whether it must be further evacuated or salvaged. If an item is to be repaired, all essential repairs must be specified on the job order by the inspector. The inspector decides whether defective components or assemblies will be replaced or repaired. The factors affecting this determination are the time and equipment necessary for each operation, and the availability of repair parts. The normal procedure in expediting the repair of end items is to replace defective components and assemblies. The unserviceable components and assemblies are subsequently repaired and returned to supply. If serviceable assemblies are not on hand, it may be necessary to repair the defective assemblies and replace them on the end items. Inspectors must be alert to the supply situation and base their decisions upon the availability of repair parts. (Even though the inspectors may know that the preferred items to effect repair are not available from supply, they should place demands for these items on supply in order to prevent unintentional reduction of requisitioning objectives and ultimate nonstockage of preferred items.) The operations control officer may change the inspector's instruction (from "replace" to "repair," or vice versa) when it becomes evident that such a change will expedite the repair of an item. In ordering parts for a job it is better that the inspector overestimate the parts needed than to underestimate and have the repairs delayed for lack of parts while the job is in process. Even with the use of the most proficient inspectors, there will be instances when the requirement for some parts will not be known until repairs are in progress.

d. In-Process Inspection. This inspection is extremely important. Emphasizing in-process inspections will significantly reduce the number of rejections by the final inspectors. It is often easier to detect potential deficiencies while the repair of equipment is in progress than to find them after the work has been completed. Often, when equipment is dismantled, deficiencies can be noted which may not be detected at any other time. Shop supervisory personnel are charged with the primary responsibility for performing in-process inspections, but their efforts may be augmented by the inspection section. A great number of final inspection rejections indicates the need for improving in-process inspections.

e. Final Inspections. Every piece of ordnance materiel must be inspected prior to its release from an ordnance maintenance shop. The final inspection is the most important means of controlling the quality of the work. During the final inspection inspectors may make minor adjustments; however, equipment needing additional repairs or whose repair does not conform to standards will be returned to the shop for correction of deficiencies. The final inspection will consist of a complete technical inspection, with emphasis on the work performed by the shop. Whenever possible, the initial and final inspections of any particular piece of equipment should be performed by different inspectors.

30. Maintenance Shop

a. General. The bulk of the maintenance mission of the GAS company is performed by the wheeled vehicle repair platoon and the engine and power train platoon. Allied trades support (welding, body repair, fabrication of parts, repair of woodwork) is provided by the service section of the service, supply, and evacuation platoon. In most cases, the wheeled vehicle platoon will concentrate on the repair of complete vehicles, while the engine and power train platoon will concentrate on the repair of components such as engines, power trains, and fuel and electrical assemblies. For this reason, the layout and modes of operation of each of these platoons will necessarily differ.

b. Shop Layout and Sequence of Operations.

- (1) A GAS company normally utilizes a step-by-step, bay-type shop layout (job shop production method) for the performance of maintenance on automotive end items (wheeled vehicles and trailers). The shop consists of a number of bays in which the following operations are performed. (Although it is desirable to perform the operations in the order indicated, the workload of the various shop sections might make it necessary to change the order to balance the workload of the various shop sections.)
 - (a) Any necessary cleaning is performed first. Vehicles received from a collecting point will usually require cleaning; those received from a direct support unit may not.
 - (b) Next, an initial (technical) inspection is performed to determine the extent of repairs necessary to return the vehicle to serviceability. Repairs which are "nice to have" or which are desired merely to improve the appearance of an item will not be performed.

- (c) Vehicles are then moved to the repair bay of the maintenance section if it is necessary to replace major assemblies. Major assemblies include engines, axles, transmissions, etc.
 - (d) Next, the tune-up bay adjusts and regulates the engines and may replace minor assemblies such as carburetors, starters, etc.
 - (e) If the vehicle is in need of body and fender work, welding, or woodwork, it will be moved to the repair bay of the service section.
 - (f) The next operation is painting. This is done only when necessary.
 - (g) Finally, a final (technical) inspection is performed to determine if all required repairs have been performed, whether they were performed satisfactorily, and whether any additional work is needed. If additional work is required, the vehicle is returned to the bay responsible; if the vehicle is serviceable, the paperwork accompanying the job and the final inspection form are sent to the shop office signifying that the vehicle is ready for disposition.
- (2) The specific number of bays utilized and the space requirements for each depend on the workload, area available, and desires of the commander. At all times consideration must be given to reducing the frequency and distance of movement between operations, while at the same time avoiding congestion.
 - (3) The machine shop is set up near the vehicle bays. It fabricates items needed in the shops which are not available through supply channels.
 - (4) The engine and power train repair platoon is usually divided into engine, power train, and fuel and electrical systems reconditioning sections. These reconditioning sections are not organized into multiple bays. Items being repaired by the reconditioning sections remain in one bay until work is completed. Final inspection is performed right in the bay.
 - (5) The maintenance shop should have a toolroom in which organizational tools are stored, maintained, and controlled by a designated toolkeeper.

c. Management. The maintenance shops must be organized in such a way that the principles of management may be properly implemented. In so doing it is necessary to:

- (1) Divide sections into teams.

- (2) Maintain a proper balance of skills among teams so that each team will have the skills required for each operation it is called upon to perform.
- (3) Keep the span of control for each supervisor within bounds.
- (4) Provide sufficient space and equipment in order to profitably employ all members of the team.

d. Job Assignment. Jobs are assigned to the appropriate platoon or section by the shop office. These assignments are based on the work to be accomplished as listed on the Work Request and Job Order, DA Form 811. Upon receipt of a job, the platoon leader or the section chief assigns the job to a team having the manpower, skill, and space available to complete the job within the allowable time limits. Each supervisor, thereafter, must closely control each job being accomplished by his personnel. He must know the status of repair parts needed for each job and must be prepared to undertake another repair job if parts needed for a particular job are not available in supply or cannot be fabricated. He must be prepared, at all times, to shift personnel in a manner that will insure that all work progresses according to schedule and that manpower is not wasted.

31. Service Section

a. General. The service section of a GAS company includes specialists and special equipment that are pooled to do work common to both repair platoons. Any specialists or equipment that are required on a full-time basis by a repair platoon, or a section thereof, should be assigned to that platoon or section.

b. Composition. The following units are normally included in the service section:

- (1) Machine shop unit.
- (2) Welding unit.
- (3) Body repair unit.
- (4) Woodworking unit.

c. Methods of Operation.

- (1) The service section accomplishes work requests received on DA Form 811 by the shop office and passed on to the service section. Work requests may be initiated by supported organizations, by the repair platoons of the company, by the supply section, by the ordnance battalion headquarters, or other higher authority. Work for the repair platoons is accomplished at the service section area or by dispatching the necessary specialists and

equipment to do the work in the area of the platoon initiating the request.

- (2) The service section is frequently able to recondition worn parts, to fabricate needed parts, and to modify assemblies and parts. The service section requires a varied stock of hardware and metal stock. These stocks may be obtained from supply channels, ordnance collecting points, quartermaster salvage and collecting points, and the salvage of the other shops.

32. Evacuation Section

The wreckers assigned to a GAS company are intended, primarily, to handle heavy equipment within the shop area. They have a secondary mission of loading heavy assemblies when the unit moves. In addition, they are used in any recovery and evacuation operations conducted by the unit. The evacuation section may be given specific jobs or may operate on a call basis. To avoid dissipation of effort, all orders and work requests are channeled through the evacuation section chief. For details on evacuation procedures and controls, see FM 9-4.

Section IV. SUPPLY SECTION

33. Supply Section

a. The supply section of the service, supply, and evacuation platoon is responsible for the requisitioning, storage, in-storage maintenance, and issue of repair parts and shop supplies required by the various operating sections of the company; for maintaining control and accounting procedures with respect to these supplies; and for preparing and maintaining required records and reports. The section functions, primarily, to provide the supplies and materials needed in the conduct of the company's maintenance operations, to account for serviceable and unserviceable assets either repaired or being repaired by the company, to return repaired items to supply channels, and to see that items which cannot be repaired within the company are given proper disposition. The supply section operates within, or in proximity to, the maintenance shops so as to permit efficient liaison with the shops. Personnel of the supply section include the supply officer, section chief, ordnance supply specialists, supply clerks, a stock records clerk, and a forklift operator. The functions of the supply section include, but are not limited to, the following:

- (1) Requisitioning, storing, performing in-storage maintenance, and issuing repair parts and maintenance supplies.

- (2) Maintaining stock records pertaining to (1) above.
- (3) Examining requisitions to verify correctness of nomenclature, stock number, and classification.
- (4) Inspecting and identifying incoming shipments and verify the count.
- (5) Conducting follow-up action as required.
- (6) Conducting liaison with the other operating sections of the company.
- (7) Performing stock control and supply accounting procedures.
- (8) Maintaining a locator system to show the physical location of parts in storage.
- (9) Advising on the interchangeability and identification of ordnance repair parts.
- (10) Assisting in the movement of heavy items to and from other sections and platoons of the company.
- (11) Maintaining a library of supply manuals.
- (12) Arranging for the supply of items not available from supporting supply facilities by initiating work orders for items to be fabricated by the service section or by local procurement (if authorized).
- (13) Keeping records on serviceable and unserviceable end items.
- (14) Keeping records of the demands registered on the supply section for repair parts and supplies.
- (15) If so directed, maintaining a portion of the field army stock of vehicles.
- (16) Reporting the status of stocks on hand.
- (17) Shipping to supply units, as directed, those repaired components and assemblies that are excess to established stock levels.

b. Supply operations of the section are governed by AR 711-16, Installation Stock Control and Supply Procedures.

c. Since the GAS company has no external repair parts supply mission, the supply section makes issues to the operating sections of the company only (except for vehicles when the company is maintaining a portion of the field army reserve stock of these items). Requisitions from the company elements are presented to the supply section on DA Form 1546 (Request for Issue or Turn-In) or DA Form 9-79 (Parts Requisition), depending on local procedures in effect. The forms to be used and the procedures for obtaining repair parts and shop supplies from the supply section

should be included in the supply SOP. Replenishment of supply section stocks is accomplished by submitting requisitions to the supply facility responsible for supporting the company. These requisitions may be of the single line variety (DA Form 1546) or may be punched card forms (provided the company is operating under an Automatic Data Processing System (ADPS)). Supply operations of a GAS company utilizing ADPS procedures will be governed by theater directives and pertinent regulations that will be published as procedures and equipment become standardized. AR's governing supply operations are indexed in DA Pam 310-1.

d. The supply section makes every effort to fill requisitions as soon as they are received. When a requested item is not in stock, a suitable substitute is provided, if possible. If necessary supplies are not available through normal supply channels, the service section may be able to fabricate the items or the company may be authorized to obtain them through local procurement.

- (1) Requirements for the fabrication of repair parts are initiated by the supply section on DA Form 811, Work Request and Job Order. The supply section may annotate its stock record cards to indicate those items that may be fabricated if not available through normal supply channels. However, all demands are registered, whether the items can be fabricated locally or not.
- (2) AR 725-950 covers the local purchase of ordnance expendable supplies. SR 715-110-50 establishes procedures governing local purchase of supplies and materiel for which the Ordnance Corps is assigned logistical responsibility. The methods of purchase are prescribed in Armed Forces Procurement Regulations, Army Procurement Procedures, and Ordnance Procurement Instructions.

e. Most materiel repaired by the GAS company is returned to supply channels; therefore, such materiel received by the company for repair is entered on the unserviceable property account of the supply section. The supply section then initiates a work request and submits it to the shop office. Items repaired by the shops are picked up on the serviceable account of the supply section until such time as turn-in to a supply facility is effected. Those items not reparable within the company are evacuated through proper channels.

f. The GAS company may be required to maintain a portion of the field army stock of wheeled vehicles, especially in instances where an ordnance park company is not available. These vehicles are accounted for until such time as they are issued or shipped. All shipments and issues are controlled by the field army ordnance officer.

CHAPTER 5

INSPECTIONS

34. General

The inspections with which the GAS company will become involved include: technical inspections, organizational inspections, command maintenance inspections, and spot-check inspections. The GAS company will be subject to all of the types of inspections noted above, will perform technical inspections on ordnance materiel, and may be required to provide personnel for the conduct of ordnance spot-check and command maintenance inspections in other units.

35. Technical Inspection

Technical inspections are those performed on ordnance equipment prior to its entry into an ordnance maintenance shop to determine the nature and extent of repairs required, and those performed after the shop has completed its work to determine whether all the required maintenance was accomplished and whether it was performed satisfactorily. The former is termed an initial inspection while the latter is called a final inspection. These inspections are performed by the inspection section of the company and are discussed at length in chapter 4.

36. Organizational Inspections

a. Organizational inspections are those performed by commanders, or their representatives, to determine whether the mess supply, administrative, and maintenance procedures of the units under their control meet prescribed standards; to determine whether equipment is serviceable and whether it is being utilized properly; to reveal areas in which additional training is necessary; to evaluate the efficiency of operations; to determine whether directives and established procedures are being complied with; and to determine the operational readiness of personnel and equipment. This general category of inspections also includes those inspections of the company conducted by food service personnel of higher headquarters or by the inspector general of the command, or inspections of some aspect of training by representatives of major commanders or chiefs of technical services.

b. In the conduct of an organizational inspection of his company, the commander of the GAS company may prepare a checklist, according to his requirements, to include all the items or procedures he wishes to inspect. For details on the types and frequency of organizational inspections, see chapter 7 of FM 9-4.

37. Spot-Check and Command Maintenance Inspections

Spot-check and command maintenance inspections of ordnance equipment are conducted by inspection teams provided by the commander having field maintenance and supply responsibility. Personnel of direct support units are usually used to conduct these inspections; however, on occasion the GAS company may be required to provide personnel for these inspection teams. The basic documents authorizing and providing for inspections of ordnance supplies and equipment are AR's 750-5, 750-8, and 750-925. Spot-check and command maintenance inspections of supplies and equipment of the other technical services which are authorized and carried by the GAS company are conducted as prescribed in AR's 750-8, 750-325, 750-425, and 750-625. For additional information on these inspections, see the appropriate regulation and FM 9-1.

CHAPTER 6

SAFETY

38. General

a. In accomplishing its mission, the GAS company handles many items of bulky, heavy equipment, and is required to store and use many potentially dangerous substances such as the acids and other chemicals used in cleansing processes. In addition, normal maintenance operations entail the use of tools and equipment which can result in injury to personnel and damage to equipment if not utilized properly. Misuse of any items of equipment or neglect of the safety precautions to be used in handling materiel can result in injuries and accidents which may seriously hamper the company's operations. An effective safety program, therefore, is essential to the successful accomplishment of the company's mission.

b. The safety program must encompass all phases of operations. All personnel must be thoroughly indoctrinated in the proper handling of materiel; the safety procedures to be exercised when using tools, machinery, or vehicles; and the precautions necessary when handling or storing hazardous materials. In addition, personnel must be impressed with the importance of constant vigilance to detect potential hazards, encouraged to take remedial action to reduce or eliminate the danger, and be required to report all accidents or safety hazards promptly.

39. Safety Organization

a. A safety program has but one objective—the prevention of accidents. The program should be based on the provisions of AR 385-10.

b. The implementation of the program necessitates the establishment of a safety organization consisting of a safety officer who is responsible for the supervision and coordination of all safety activities within the company, and a safety committee consisting of section supervisors and foremen.

40. Safety Rules

a. An effective safety program will depend on the proper and continuous adherence to the following basic rules of accident prevention:

- (1) Create and maintain active interest to assure that all personnel participate in the program.
- (2) Assemble all the information bearing on accident occurrence so that the causes may be determined.
- (3) Analyze all facts bearing on accident occurrence and, on the basis of these facts, take corrective action to prevent future accidents.

b. Active participation on the part of all company personnel is the most important element of the safety program. Their interest in the program should be maintained by appealing to their pride and by pointing out their responsibilities to themselves and the company. Suggestions for improving practices and eliminating hazards should be encouraged and the individuals making the suggestions should be given credit if their ideas are adopted or explanations if their suggestions prove impractical.

c. If accidents occur despite precautions taken to avoid them, it is necessary to determine the cause and effect so that preventive measures can be taken to avoid future occurrences, so that operating procedures can be improved, and so that personnel can be made to realize the effect an accident has on operations and the malpractice or hazard that was responsible. In this regard it is necessary to comply with the provisions of AR 385-40 and determine, as a minimum:

- (1) Who was injured or what was damaged.
- (2) The time and place the injury or accident occurred.
- (3) The severity and the cost (in manpower and materiel) of the injury or accident.
- (4) The nature of the accident or injury.
- (5) The specific unsafe act committed, if any, and the reasons therefor.
- (6) The nature of any specific mechanical or physical hazard, if one existed.
- (7) Whether any tools or equipment being used were defective or used improperly.

d. After the facts have been determined, the factors contributing to the accident should be eliminated by improving operations, removing hazards, and training personnel in the proper use of tools and equipment. Moreover, corrective action must be supplemented by constant vigilance on the part of supervisors to assure that familiarity with operations does not lead to contempt for the safety practices involved.

41. Safety Plan

A few of the elements that should be included in the company safety plan are:

- a. Designation of a safety officer and committee and their duties.
- b. The procedure to be followed in reporting accidents or safety hazards. This procedure should emphasize promptness and completeness of reporting all accidents or injuries, no matter how slight, and the reporting of all possible hazards, no matter how insignificant they may seem.
- c. The necessity for reporting equipment damage resulting from an accident to prevent injuries to personnel from continued use of this equipment.
- d. Investigation of all injuries or accidents to determine their cause and to take corrective action to prevent their recurrence.
- e. Special precautions to be taken in the storage and handling of ammunition, gasoline, and other hazardous materials, including the designation and marking of storage areas, and the location and use of first aid and firefighting equipment.
- f. Designation of firefighting and first-aid teams.
- g. Location, care, and use of special clothing and equipment.
- h. Procedures for and frequency of accident prevention inspections.
- i. Procedures for submitting suggestions on improvement of safety practices.
- j. Procedures for disseminating information on new operations or equipment to all personnel of the company.
- k. The need for observing safety practices off the job and any special precautions to be taken.
- l. Provision for regularly scheduled safety meetings to discuss safety practices, with emphasis on areas in which laxity has been evidenced.

42. Duties and Responsibilities of Personnel

a. *Commander.* It is the company commander's responsibility to insure that all activities of his unit are conducted in accordance with established safety rules. He is also responsible for determining the cause of accidents and for seeing that corrective action is taken to prevent their recurrence. When no existing safety rule applies or when a deviation from an established safety rule is desired, it is his responsibility to submit a request, including full particulars and detailed plans and specifications, to the appropriate headquarters for decision.

b. *Safety Officer.* He is responsible to the commander for establishment and supervision of the safety organization, for preparation of the safety plan and establishment of safety procedures, for the performance of accident prevention investigations, and for

establishment and maintenance of continued interest in and the success of all phases of the safety program. The company commander will designate one of the company officers to perform the duties of safety officer, as an additional duty.

c. Supervisors. Supervisors and foremen exercise direct daily supervision over operating personnel. In their daily contacts with personnel on the job, they are in a position to personally witness working conditions and the hazards to which operating personnel are exposed. The supervisors and foremen are the persons through whom the full force and effect of all accident prevention measures find application in daily operations. They should call frequent and regular meetings to brief all personnel on safety procedures, to elicit any suggestions on the improvement of safety practices, and to publicize any newly adopted safety procedures. Such meetings should be held at the work location, and their objective should be to brief all personnel on safe job performance for new and unusual work or routine jobs, and to impress workers with the need for constant alertness and observation of safety measures so that familiarity with certain operations will not result in hazardous shortcuts or laxity in job performance which, in themselves, could result in increasing the accident rate.

d. Individuals. All personnel should be made to realize that the safety rules have been established for their protection and welfare. It is their responsibility to follow all instructions and to use all the safeguards incident to the use of tools, machinery, equipment, and processes. Cooperation among the workers in the development and practice of safe working habits is essential in order to prevent injuries to personnel and damage to materiel and facilities.

43. Special Precautions

a. There is a "right way" and a "wrong way" to use a tool or piece of equipment. Unless personnel understand the proper use of tools and equipment, injuries, loss of efficiency, and damage to materiel or facilities will probably result. All personnel should familiarize themselves with the tools and equipment they use. This information may be obtained from appropriate training manuals or training bulletins. Prior to undertaking the disassembly or repair of items which are unfamiliar to the repairman, he should refer to the appropriate publication in order to determine any special precautions that should be taken. If necessary, the supervisor should be consulted on any points in question.

b. The properties and characteristics of gasoline make it one of the greatest potential hazards to the safety of any organization. The precautions to be taken in handling gasoline are covered in

TM 10-1101. All personnel should be familiar with the provisions of this manual.

c. Some of the items used by a GAS company are potentially hazardous to personnel and equipment because of their chemical properties. Included in this group are items which result in explosions or explosively rapid burning when in a gaseous state (e.g., anhydrous ammonia); others which are toxic or produce toxic fumes which result in damage to body tissues when inhaled, ingested, or brought into contact with the skin (e.g., carbon tetrachloride); and those which have a corrosive effect on materiel and can seriously damage body tissues on contact (e.g., sulphuric acid). The precautions to be used depend on the hazard involved. In the case of substances producing dangerous vapors, adequate ventilation is mandatory. Moreover, care must be taken to avoid spillage of dangerous chemicals, and they must be stored in tightly sealed containers. The use of chemicals also requires special handling techniques and may require special items of clothing and equipment. In addition, personnel must be able to quickly recognize symptoms of illness caused by chemicals and should be able to render prompt and proper first aid. For additional hazards and detailed information on the precautions to be exercised in each case, see the technical manual pertaining to the item of equipment or operation with which the hazardous item is associated.

d. Vehicles moving through evacuation channels may contain items of ammunition lodged in weapons or lying loose in the vehicles. Regardless of the fact that ammunition personnel are usually available to render the special handling necessary (in the case of evacuated items containing ammunition, assistance from the nearest ammunition installation is requested), all company personnel must be familiar with the precautions to be used in handling ammunition. These precautions are covered in FM 9-5, TM 9-1900, and TM 9-1903.

e. In the GAS company, the safety aspects of the following operations must also be stressed:

- (1) *Operation of forklift trucks.* The capacity of the truck must not be exceeded. It should be loaded so as to permit operator vision, and the width and height of aisles and entrances to storage facilities must be considered. Although the forklift issued to the GAS company is designed for use over rough terrain, the operator should use good judgment in its operation to prevent tipping it over or bogging down.

(2) *Vehicle operation.*

- (a) Drivers should be selected and trained in accordance with the provisions of TM 21-300. Vehicles should be given a safety inspection daily by drivers. For the protection of personnel, speed limits should be established within the company area and vehicles should be prohibited from entering the bivouac area during hours of darkness.
 - (b) Special care must be taken when backing a vehicle. An individual, in front of the vehicle and in full view of the vehicle operator, should give instructions to the driver.
 - (c) The backing of semitrailers and cargo trailers is particularly difficult and dangerous. Again a guide is necessary to give the driver instructions from the ground. Care must be taken to avoid jackknifing.
 - (d) In the operation of wreckers, operators must also be sure that the wrecker boom, cables, and hooks are in serviceable condition. They should be inspected before each operation requiring their use. If engaged in recovery of a vehicle, the operator must insure that the cable and wrecker boom have the required capacity and that the wrecker is anchored securely. This is not a one-man operation. All wrecker operators should be familiar with and practice the procedures outlined in TM 9-8028.
- (3) *Welding.* All welders must be familiar with the processes and procedures covered in TM 9-237, and the TM applicable to the equipment with which they are supplied. They must at all times use the safety equipment provided, must consider the safety of other personnel when welding, and must not be allowed to operate welding equipment in areas where sparks might result in fires or explosions, or where personnel may receive eye burns from the arc.
- (4) *Storage and packaging.* Boxes and packages must be sturdily constructed. In storage operations, stacks must be stable. Heavy or bulky boxes or packages should not be lifted by one man.
- (5) *Ropes, winches, and cables.* These should be inspected before each use to determine serviceability. Before using these items, their capacity must be considered with respect to the load they will carry.

APPENDIX I

REFERENCES

The following references should be checked frequently for latest changes or revisions relating to material covered in this manual:

1. Army Regulations

- 30-41 Field Rations.
- 31-154 Commissaries; Troop Train and Motor Convoy Ration Procedures.
- 31-157 Troop Train and Motor Convoy Subsistence Accounts.
- 31-310 Commissaries; Purchase, Stockage, and Supply of Authorized Subsistence Supplies.
- 40-207 Individual Sick Slip.
- 65-75 Unit Mail Service.
- 140-138 Qualification Record; Officer, Warrant Officer, Enlisted Personnel.
- 220-45 Duty Rosters.
- 220-70 Companies; General Provisions.
- 230-5 Nonappropriated Funds and Related Activities; General Policies.
- 230-10 Nonappropriated Military Welfare Funds.
- 230-20 Accounting Procedures for Military Welfare Funds.
- 230-21 Accounting Procedures for Nonappropriated Funds, Inmates' Welfare Funds, Stockade Welfare Funds, and Commandants' Welfare Funds.
- 310-30-15 Organization and Equipment Authorization Tables, Personnel.
- 310-110A Orders, Bulletins, Circulars, and Memorandums Issued from Headquarters of Field Commands.
- 320-5 Dictionary of United States Army Terms.
- 320-50 Authorized Abbreviations and Brevity Codes.
- 335-60 Morning Report.
- 340-15 Correspondence.
- 345-292 Records Administration; Units of the Active Army and the Army Reserve.
- 380-5 Safeguarding Defense Information.
- 385-10 Army Safety Program.
- 385-40 Accident Reporting and Records.

385-55	Prevention of Army Motor Vehicle Accidents.
600-55	Motor Vehicle Driver Selection, Testing, and Licensing.
600-103	Legal Assistance.
611-103	Officer Qualification and Classification.
611-201	Manual of Enlisted Military Occupational Specialties.
614-240	Assignment and Reassignment of Enlisted Personnel.
623-105	Officer Efficiency Reports.
623-201	Enlisted Conduct and Efficiency Ratings.
624-200	Appointment and Reduction of Enlisted Personnel.
635-200	General Provisions for Discharge and Release.
635-204	Dishonorable and Bad Conduct Discharge.
635-205	Discharge and Release, Convenience of the Government.
635-206	Discharge; Misconduct (Fraudulent Entry, Conviction by Civil Court, AWOL, Desertion).
635-208	Discharge; Unfitness.
635-209	Discharge; Unsuitability.
640-203	Enlisted Qualification Record.
672-5-1	Decorations, Certificates, and Letters for Service.
680-20	Special Services.
711-16	Installation Stock Control and Supply Procedures.
725-950	Local Purchase and Requisitioning of Ordnance Expendable Items (Except for Ammunition and Guided Missiles).
735-10	Accounting for Lost, Damaged, and Destroyed Property.
735-11	Accounting for Lost, Damaged, and Destroyed Property.
735-35	Supply Procedures for TOE Units, Organizations, and Non-TOE Activities.
750-4	Major Overhaul Policy and Program for Oversea Commands.
750-5	Maintenance Responsibilities and Shop Operation.
750-8	Command Maintenance Inspections.
750-325	Spot Check Inspection and Reports, Chemical Corps Materiel.
750-425	Spot Check, Technical Inspections, Adjectival Ratings and Reports, Quartermaster Corps Materiel.

- 750-525 Spot Check, Technical Inspections, Adjectival Ratings and Reports, Corps of Engineers Materiel.
- 750-625 Maintenance Inspections and Reports; Signal Equipment.
- 750-925 Spot Check Inspection and Reports, Ordnance Corps Materiel.
- 910-10 Army Emergency Relief: Authorization, Organization, Operations, and Procedures.
- 940-10 National Red Cross Service Program and Army Utilization.

2. Special Regulations

- 310-30-15 Organization and Equipment Authorization Tables; Personnel.
- 605-105-5 Commissioned and Warrant Officer Personnel Military Occupational Specialties.

3. Field Manuals

- 5-20 Camouflage, Basic Principles and Field Camouflage.
- 9-1 Ordnance Service in the Field.
- 9-2 Ordnance Corps Logistical Data.
- 9-4 Ordnance General and Depot Support Service.
- 9-5 Ordnance Ammunition Service.
- 21-5 Military Training.
- 21-6 Techniques of Military Instruction.
- 21-30 Military Symbols.
- 21-40 Small Unit Procedures in Atomic, Biological and Chemical Warfare.
- 21-41 Soldier's Handbook for Nuclear, Biological, and Chemical Warfare.
- 21-48 CBR Training Exercises.
- 24-18 Field Radio Techniques.
- 24-20 Field-Wire Techniques.
- 25-10 Motor Transportation, Operations.
- 27-10 The Law of Land Warfare.
- 31-15 Operations Against Airborne Attack, Guerilla Action, and Infiltration.
- 41-5 Joint Manual of Civil Affairs.
- 41-10 Manual of Civil Affairs Operations.
- 54-1 The Logistical Command.
- 100-10 Field Service Regulations; Administration.
- 101-10 Staff Officers' Field Manual: Organization, Technical, and Logistical Data.

4. Technical Manuals

- 9-237 Welding Theory and Application.
- 9-1900 Ammunition, General.
- 9-1903 Care, Handling, Preservation, and Destruction of Ammunition.
- 9-2810 Tactical Motor Vehicle Preventive Maintenance, Supply, Inspection, and Training Procedures.
- 9-8028 Operation and Organizational Maintenance: 5-ton, 6 x 6, Cargo Truck M41 and M54; Chassis Truck M40, M61, M139, and M139C; Dump Truck M51; Truck Tractor M52; Medium Wrecker Truck M62; and Tractor Wrecker Truck M246.
- 10-206 Kitchen Cars, Supplies, Equipment, and Rations.
- 10-405 Army Mess Operations.
- 10-1101 Petroleum-Handling Operations.
- 19-500 Enemy Prisoners of War.
- 21-300 Driver Selection and Training.

5. Technical Bulletins

- 9-OSSC-A Ordnance Storage and Equipment Charts thru (Groups A thru F).
- 9-OSSC-F

6. Supply Bulletins

- 9-156 Ordnance Operational List of Specifications and Instructions for Packaging and Processing General Supplies.
- 9-184/1 Ordnance Storage and Shipment Charts: FSC Group 23, Motor Vehicles, Trailers, and Cycles: FSC Group 24 Tractors: and FSC Group 25 Bulldozers.

7. Army Training Programs

- 9-201 Army Training Program for Ordnance of the Field Army.
- 20-5 Army Training Program for Field Exercises and Maneuvers.

8. Department of the Army Pamphlets

- 20-4 Correspondence Courses Offered by Colleges and Universities Through the United States Armed Forces Institute.
- 20-21 The Army School Catalog.

- 20-300 Techniques of Work Simplification; More Effective Use of Manpower, Equipment, Materials, Space.
- 20-301 Work Simplification in Action Through Use of Work Distribution Chart, Flow Process Chart, Work Count, Motion Economy, Layout Studies: Instructor's Guide.
- 21-52 Cold Facts for Keeping Warm.
- 21-71 The U. S. Fighting Man's Code.
- 27-1 Treaties Governing Land Warfare.
- 39-1 Nuclear Weapons Employment.
- 108-1 Index of Army Motion Pictures, Film Strips, Slides, and Phono-Recordings.
- 310-1 Index of Administrative Publications (Army Regulations, Special Regulations, Department of the Army Pamphlets, Commercial Traffic Bulletins, Military Traffic Management Bulletins, General Orders, Bulletins, and Circulars).
- 310-2 Index of Blank Forms.
- 310-3 Index of Training Publications (Field Manuals, Reserve Officers' Training Corps Manuals, Training Circulars, Army Training Programs, Army Subject Schedules, Army Training Tests, War Department and Department of the Army Posters, and Firing Tables and Trajectory Charts).
- 310-4 Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.
- 310-5 Index of Graphic Training Aids and Devices.
- 310-7 Index of Tables of Organization and Equipment, Type Tables of Distribution, and Tables of Allowances.
- 350-1 The United States Armed Forces Institute Catalog.
- 350-60 Announcement of Army Extension Courses
- 750-1 Preventive Maintenance Guide for Commanders.

9. Manual for Courts-Martial, United States, 1951

APPENDIX II

LOADING PLAN FOR MOTOR MOVEMENT (SAMPLE)

Note. This plan is based on movement of the company using organic vehicles only. Under such circumstances, some supplies and equipment will have to be left behind to be picked up later by vehicles of the first march unit, which will have to make an additional trip. If the entire move must be made in one trip, additional vehicles must be obtained from the Transportation Corps.

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
ADVANCE PARTY		
1	¼-Ton, 4 x 4 (Op Sec)	Op Control Off (Op Sec) Shop Clerk (Op Sec)
	½-Ton Trailer (Co Hq)	Clothing and Equipment of Personnel
2	2½-Ton, 6 x 6, Cargo (Sup Sec)	Supply Clerks (2) (Sup Sec) Mess Steward (Co Hq) First Cooks (2) (Co Hq) Machinist (Svc Sec) Repair Inspector (Op Sec) Senior Welder (Svc Sec) Senior Ord Sup Sp (Sup Sec) Asst Platoon Sgt (Whl Veh Rep Plat) Auto Repairmen (2) (Whl Veh Rep Plat) Asst Platoon Sgt (Eng and Pwr Tn Rep Plat) Auto Repairmen (2) (Eng and Pwr Tn Rep Plat) Repair Helpers (3) (Eng and Pwr Tn Rep Plat)
	1½-Ton Trailer (Sup Sec)	Clothing and Equipment of Personnel
3	2½-Ton, 6 x 6, Cargo (Co Hq)	Cook's Helper (Co Hq) Cooks (2) (Co Hq) TOE Mess Equipment and Supplies
	1½-Ton Trailer (Co Hq)	Water

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
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CONTROL

4	¼-Ton, 4 x 4 (Co Hq)	Light Truck Driver (Co Hq) IS Radio Operator (Co Hq) Company Commander (Co Hq)
5	¼-Ton, 4 x 4 (Eng and Pwr Tn Rep Plat)	Repair Helper (Eng and Pwr Tn Rep Plat) Platoon Leader (Eng and Pwr Tn Rep Plat)

FIRST MARCH UNIT

6	¾-Ton, 4 x 4 (Sup Sec)	Supply Clerk (Sup Sec) Supply Officer (Sup Sec) Administrative and Operational Equipment
	¾-Ton Trailer (Sup Sec)	TOE Equipment of Supply Section
7	5-Ton, 6 x 6, Tractor (Sup Sec)	Supply Clerk (Sup Sec) Sr Ord Sup Sp (Sup Sec) Sr Auto Repairman (Whl Veh Rep Plat)
	12-Ton Sup Van, Semitrailer (Sup Sec)	Parts Cabinets
8	5-Ton, 6 x 6, Tractor (Sup Sec)	Supply Clerk (Sup Sec) Ord Supply Sp (Sup Sec) Sr Auto Repairman (Whl Veh Rep Plat)
	12-Ton Sup Van, Semitrailer (Sup Sec)	Parts Cabinets
9	5-Ton, 6 x 6, Tractor (Sup Sec)	Hv Truck Driver (Sup Sec) Ord Sup Sp (Sup Sec) Sr Auto Repairman (Eng and Pwr Tn Rep Plat)
	12-Ton Sup Van, Semitrailer	Parts Cabinets

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
10	2½-Ton, 6 x 6, Cargo (Sup Sec)	Stock Records Clerk (Sup Sec) Ord Sup Sp (Sup Sec) Sr Auto Repairman (Eng and Pwr Tn Rep Plat) Parts Cabinets
	1½-Ton Trailer, Cargo (Sup Sec)	TOE Equipment of Supply Section
11	2½-Ton, 6 x 6, Cargo (Sup Sec)	Stock Records Sp (Sup Sec) Ord Sup Sp (Sup Sec) Sr Auto Repairman (Eng and Pwr Tn Rep Plat) Parts Cabinets
	1½-Ton Trailer, Cargo (Sup Sec)	TOE Equipment of Supply Section
12	2½-Ton, 6 x 6, Cargo (Sup Sec)	Ord Sup Sp (Sup Sec) Sr Auto Repairman (Eng and Pwr Tn Rep Plat) Auto Repairman (Eng and Pwr Tn Rep Plat) Parts Cabinets.
	1½-Ton Trailer, Cargo (Sup Sec)	TOE Equipment of Supply Section
13	2½-Ton, 6 x 6, Cargo (Sup Sec)	Ord Sup Sp (Sup Sec) Section Chief (Sup Sec) Repair Parts
	1½-Ton Trailer, Cargo (Sup Sec)	Repair Parts
14	2½-Ton, 6 x 6, Tractor (Svc Sec)	Machinist (Svc Sec) General Carpenter (Svc Sec) Auto Repairman (Eng and Pwr Tn Rep Plat)
	6-Ton Shop Van, Semitrailer (Svc Sec)	TOE Equipment of Service Section

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
15	2½-Ton, 6 x 6, Tractor (Svc Sec)	Senior Welder (Svc Sec) Welder Helper (Svc Sec) Auto Repairman (Eng and Pwr Tn Rep Plat)
	6-Ton Shop Van, Semitrailer (Svc Sec)	TOE Equipment of Service Section
16	2½-Ton, 6 x 6, Cargo (Svc Sec)	Welder Helper (Svc Sec) Welder (Svc Sec) Auto Repairman (Whl Veh Rep Plat) TOE Equipment of Service Section
	1½-Ton Trailer, Cargo (Svc Sec)	Operating Supplies of Service Section
17	2½-Ton, 6 x 6, Cargo (Svc Sec)	Machinist Helper (Svc Sec) Machinist (Svc Sec) Auto Repairman (Whl Veh Rep Plat) Operating Supplies and TOE Equipment of Service Section
	1½-Ton Trailer, Cargo	TOE Equipment of Service Section
18	2½-Ton, 6 x 6, Cargo (Svc Sec)	Mtl Body Rep Helper (Svc Sec) Section Chief (Svc Sec) Operating Supplies and TOE Equipment of Service Section
	1½-Ton Trailer, Cargo	TOE Equipment of Service Section
19	2½-Ton, 6 x 6, Cargo (Co Hq)	Armorer (Co Hq) Personnel Adm Clerk (Co Hq) Supply Sgt (Co Hq) Organizational Supplies and Equipment
	1½-Ton Trailer, (Co Hq)	TOE Equipment of Company Headquarters
20	2½-Ton, 6 x 6, Cargo (Co Hq)	Company Clerk (Co Hq) Motor Sergeant (Co Hq) First Sergeant (Co Hq) Switchboard Op (Co Hq) Organizational Supplies and Equipment

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
21	¾-Ton, 4 x 4, Cargo (Op Sec)	Lt Truck Driver (Op Sec) Repair Con Supv (Op Sec) Repair Inspectors (2) (Op Sec) Clerk Typist (Op Sec) Asst Shop Clerk (Op Sec)
	¾-Ton Trailer, Cargo (Op Sec)	Supplies, Records, and Equipment of Operations Section
22	5-Ton, 6 x 6, Wrecker (Evac Sec)	Wrecker Operator (Evac Sec) Auto Repairman (Whl Veh Rep Plat)
23	5-Ton, 6 x 6, Wrecker (Evac Sec)	Wrecker Operator (Evac Sec) Auto Repairman (Whl Veh Rep Plat)

SECOND MARCH UNIT

24	¼-Ton, 4 x 4 (Whl Veh Rep Plat)	Lt Truck Driver (Whl Veh Rep Plat) Platoon Sergeant (Whl Veh Rep Plat) Platoon Leader (Whl Veh Rep Plat)
	¼-Ton Trailer (Whl Veh Rep Plat)	TOE Equipment of Wheeled Vehicle Repair Platoon
25	2½-Ton, 6 x 6, Tractor (Whl Veh Rep Plat)	Toolroom Keeper (Whl Veh Rep Plat) Sr Auto Repairmen (2) (Whl Veh Rep Plat)
	6-Ton Shop Van, Semitrailer (Whl Veh Rep Plat)	TOE Equipment of Wheeled Vehicle Repair Platoon
26	2½-Ton, 6 x 6, Cargo (Whl Veh Rep Plat)	Repair Helper (Whl Veh Rep Plat) Sr Auto Repairmen (2) (Whl Veh Rep Plat) Shop Supplies and TOE Equipment of Wheeled Vehicle Repair Platoon
	1½-Ton Trailer (Whl Veh Rep Plat)	TOE Equipment of Wheeled Vehicle Repair Platoon

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
27	2½-Ton, 6 x 6, Cargo (Whl Veh Rep Plat)	Repair Helper (Whl Veh Rep Plat) Fuel-El Repairmen (2) (Whl Veh Rep Plat) Shop Supplies and TOE Equipment of Wheeled Vehicle Repair Platoon
	1½-Ton Trailer	TOE Equipment of Wheeled Vehicle Repair Platoon
28	2½-Ton, 6 x 6, Cargo (Whl Veh Rep Plat)	Repair Helpers (3) (Whl Veh Rep Plat) Sr Auto Repairmen (2) (Whl Veh Rep Plat) Machinist (Svc Sec) Sr Mtl Body Repairman (Svc Sec) Mtl Body Repairmen (2) (Svc Sec) Auto Repairmen (2) (Whl Veh Rep Plat)
	1½-Ton Trailer (Whl Veh Rep Plat)	Clothing and Equipment of Personnel
29	2½-Ton, 6 x 6, Tractor (Eng and Pwr Tn Rep Plat)	Fuel-El Repairman (Eng and Pwr Tn Rep Plat) Fuel-El Sys Foreman (Eng and Pwr Tn Rep Plat) Sr Fuel-El Repairman (Eng and Pwr Tn Rep Plat)
	6-Ton Shop Van, Semitrailer	Shop Supplies and TOE Equipment of Engine and Power Train Repair Platoon
30	2½-Ton, 6 x 6, Tractor (Eng and Pwr Tn Rep Plat)	Auto Repairman (Eng and Pwr TN Rep Plat) Sr Auto Repairmen (2) (Eng and Pwr Tn Rep Plat)
	6-Ton, Shop Van, Semitrailer (Eng and Pwr Tn Rep Plat)	Shop Supplies and TOE Equipment of Engine and Power Train Repair Platoon
31	2½-Ton, 6 x 6, Cargo (Eng and Pwr Tn Rep Plat)	Auto Repairman (Eng and Pwr Tn Rep Plat) Sr Auto Repairmen (2) (Eng and Pwr Tn Rep Plat) Shop Supplies and TOE Equipment of Engine and Power Train Repair Platoon.

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
	1½-Ton Trailer (Eng and Pwr Tn Rep Plat)	TOE Equipment of Engine and Power Train Repair Platoon
32	2½-Ton, 6 x 6, Cargo (Eng and Pwr Tn Rep Plat)	Repair Helper (Eng and Pwr Tn Rep Plat) Fuel-El Repairmen (2) (Eng and Pwr Tn Rep Plat) Shop Supplies and TOE Equipment of Engine and Power Train Repair Platoon
	1½-Ton Trailer (Eng and Pwr Tn Rep Plat)	TOE Equipment of Engine and Power Train Repair Platoon
33	2½-Ton, 6 x 6, Cargo (Eng and Pwr Tn Rep Plat)	Repair Helper (Eng and Pwr Tn Rep Plat) Auto Repairmen (2) (Eng and Pwr Tn Rep Plat) Shop Supplies and TOE Equipment of Engine and Power Train Repair Platoon
	1½-Ton Trailer (Eng and Pwr Tn Rep Plat)	TOE Equipment of Engine and Power Train Repair Platoon
34	2½-Ton, 6 x 6, Cargo (Eng and Pwr Tn Rep Plat)	Repair Helper (Eng and Pwr Tn Rep Plat) Platoon Sergeant (Eng and Pwr Tn Rep Plat) Shop Supplies and TOE Equipment of Engine and Power Train Repair Platoon
	1½-Ton Trailer (Eng and Pwr Tn Rep Plat)	TOE Equipment of Engine and Power Train Repair Platoon
35	2½-Ton, 6 x 6, Cargo (Eng and Pwr Tn Rep Plat)	Repair Helper (Eng and Pwr Tn Rep Plat) Asst Platoon Leader (Eng and Pwr Tn Rep Plat) Auto Repairmen (7) (Eng and Pwr Tn Rep Plat) Fuel-El Sys Repairmen (3) (Eng and Pwr Tn Rep Plat) Repair Helpers (4) (Eng and Pwr Tn Rep Plat)

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
	2½-Ton Chassis Generator Trailer (Eng and Pwr Tn Rep Plat)	
36	¾-Ton, 4 x 4, Cargo (Whl Veh Rep Plat)	Auto Repairmen (5) (Whl Veh Rep Plat) Asst Platoon Leader (Whl Veh Rep Plat) Sr Auto Repairmen (4) (Whl Veh Rep Plat)
	¾-Ton Trailer (Whl Veh Rep Plat)	Clothing and Equipment of Personnel
37	5-Ton, 6 x 6, Wrecker (Evac Sec)	Wrecker Operator (Evac Sec) Auto Repairman (Whl Veh Rep Plat)
38	5-Ton, 6 x 6, Wrecker (Evac Sec)	Wrecker Operator (Evac Sec) Auto Repairman (Whl Veh Rep Plat)

TRAIL PARTY

39	¼-Ton, 4 x 4 (Evac Sec)	Section Chief (Evac Sec) Mtl Body Rep Helper (Svc Sec) Welder (Svc Sec)
	¼-Ton Trailer (Eng and Pwr Tn Rep Plat)	Clothing and Equipment Personnel
40	5-Ton, 6 x 6, Wrecker (Evac Sec)	Wrecker Operator (Evac Sec) Auto Repairman (Whl Veh Rep Plat)
41	5-Ton, 6 x 6, Wrecker (Evac Sec)	Wrecker Operator (Evac Sec) Auto Repairman (Eng and Pwr Tn Rep Plat)

REAR PARTY

42	¼-Ton, 4 x 4 (Svc Sec)	General Carpenter (Svc Sec) Platoon Leader (Svc, Sup, and Evac Plat) Machinist (Svc Sec)
	¼ Ton Trailer (Svc Sec)	Clothing and Equipment of Personnel

Convoy position	Type vehicle and TOE assignment	Load (personnel and equipment)
43	2½-Ton, 6 x 6, Cargo (Whl Veh Rep Plat)	Repair Helpers (4) (Whl Veh Rep Plat) Auto Repairmen (10) (Whl Veh Rep Plat) Forklift Operator (Sup Sec) Stock Records Sp (Sup Sec) Fuel-El Repairmen (2) (Eng and Pwr Tn Rep Plat)
	1½-Ton Trailer (Whl Veh Rep Plat)	Clothing and Equipment of Personnel
(See Note 1)	25-Ton Semitrailer, Low Bed (Sup Sec)	Warehouse Tractor Forklift Warehouse 4-Wheel Trailers (2)
(See Note 1)	12-Ton Semitrailer, Stake Body (Sup Sec)	Bulk Ordnance Repair Parts
(See Note 1)	12-Ton Semitrailer, Stake Body (Sup Sec)	Bulk Ordnance Repair Parts
(See Note 1)	6-Ton Shop Van, Semitrailer (Eng and Pwr Tn Rep Plat)	TOE Equipment of Engine and Power Train Repair Platoon
(See Note 1)	1½-Ton Trailer, Cargo (Eng and Pwr Tn Rep Plat)	Supplies and Equipment
(See Note 1)	1½-Ton Trailer, Cargo (Eng and Pwr Tn Rep Plat)	Supplies and Equipment

Notes. ¹ These vehicles represent those which could be left behind if the movement is made with organic transportation. Vehicles from the first march unit will return to the old area to pick up the trailers left behind. One 5-ton wrecker, with crew, will also return, or may remain with the rear party.

² Clothing and individual equipment of personnel will normally be carried in the truck or the trailer of the vehicle in which the personnel are riding. This loading plan indicates clothing and individual equipment loads only for those trailers whose entire load consists of such items.

³ No personnel should be loaded in the back of any vehicle in which heavy parts or equipment are carried.

⁴ All 2½-ton and larger trucks may be loaded with three individuals in the cab. AR 385-55 specifies that a vehicle having a cab 52 inches or more in width may carry two persons in addition to the driver.

⁵ For tactical moves, steel helmets will be worn; protective masks and individual weapons will be kept readily available; and crew-served weapons will be distributed throughout the convoy.

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For explanation of abbreviations used, see AR 320-50.